

THE
GEOMETRICAL
MOSAIC
OF THE
MIDDLE AGES
BY
BIGBY WYATT
ARCHITECT.

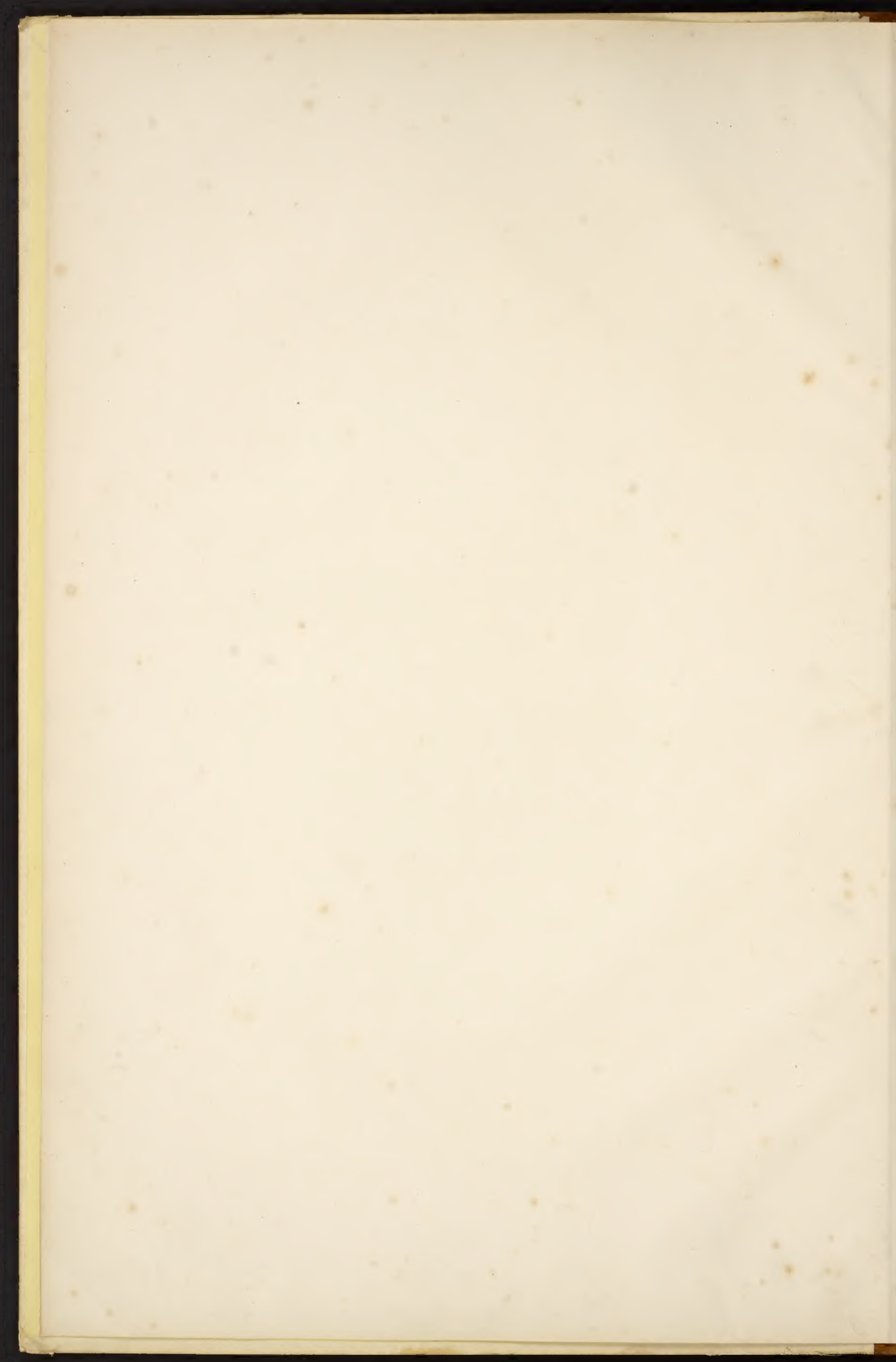


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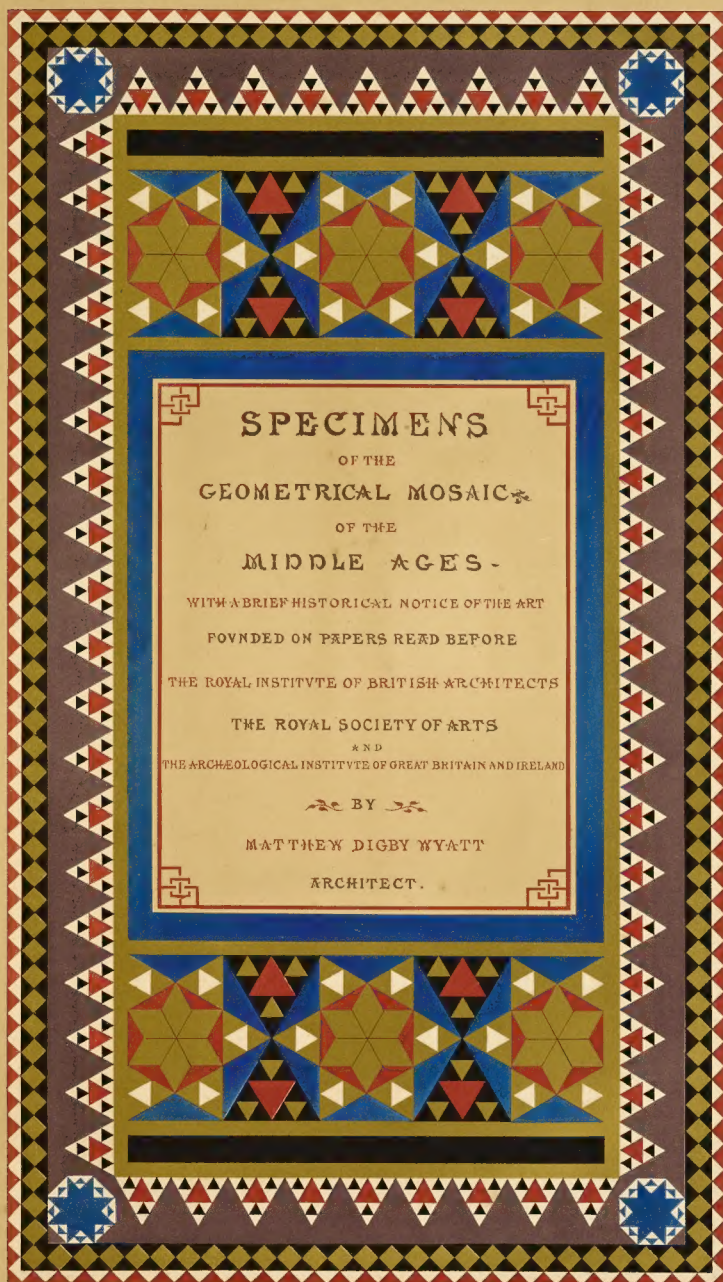
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SPECIMENS
OF THE
GEOMETRICAL MOSAIC
OF THE
MIDDLE AGES -

WITH A BRIEF HISTORICAL NOTICE OF THE ART
FOUNDED ON PAPERS READ BEFORE
THE ROYAL INSTITUTE OF BRITISH ARCHITECTS
THE ROYAL SOCIETY OF ARTS
AND
THE ARCHEOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND

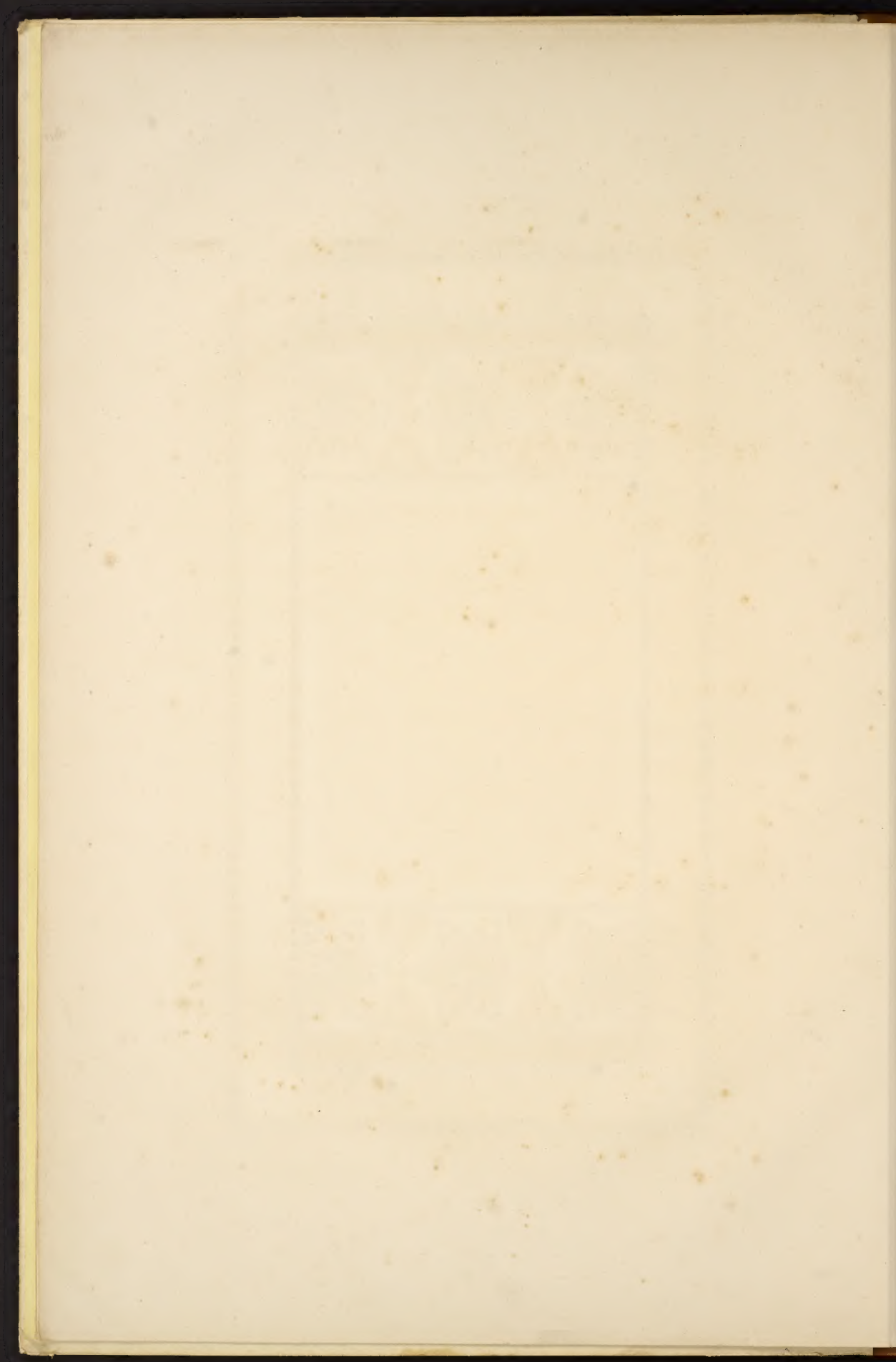
BY

MATTHEW DIGBY WYATT

ARCHITECT.

LONDON, PUBLISHED FOR THE PROPRIETOR AT 17 GATE ST. LINCOLN'S INN FIELDS.

DAY & SON LITHO TO THE QUEEN.



TO THE MOST NOBLE

THE MARQUIS OF NORTHAMPTON,

&c. &c. &c.

President of the Royal Society,

WHOSE HONOURABLE LIFE HAS EXHIBITED A CONTINUED EFFORT TO ADVANCE THE HIGHEST INTERESTS
OF SCIENCE AND OF ART,

THIS VOLUME

IS,

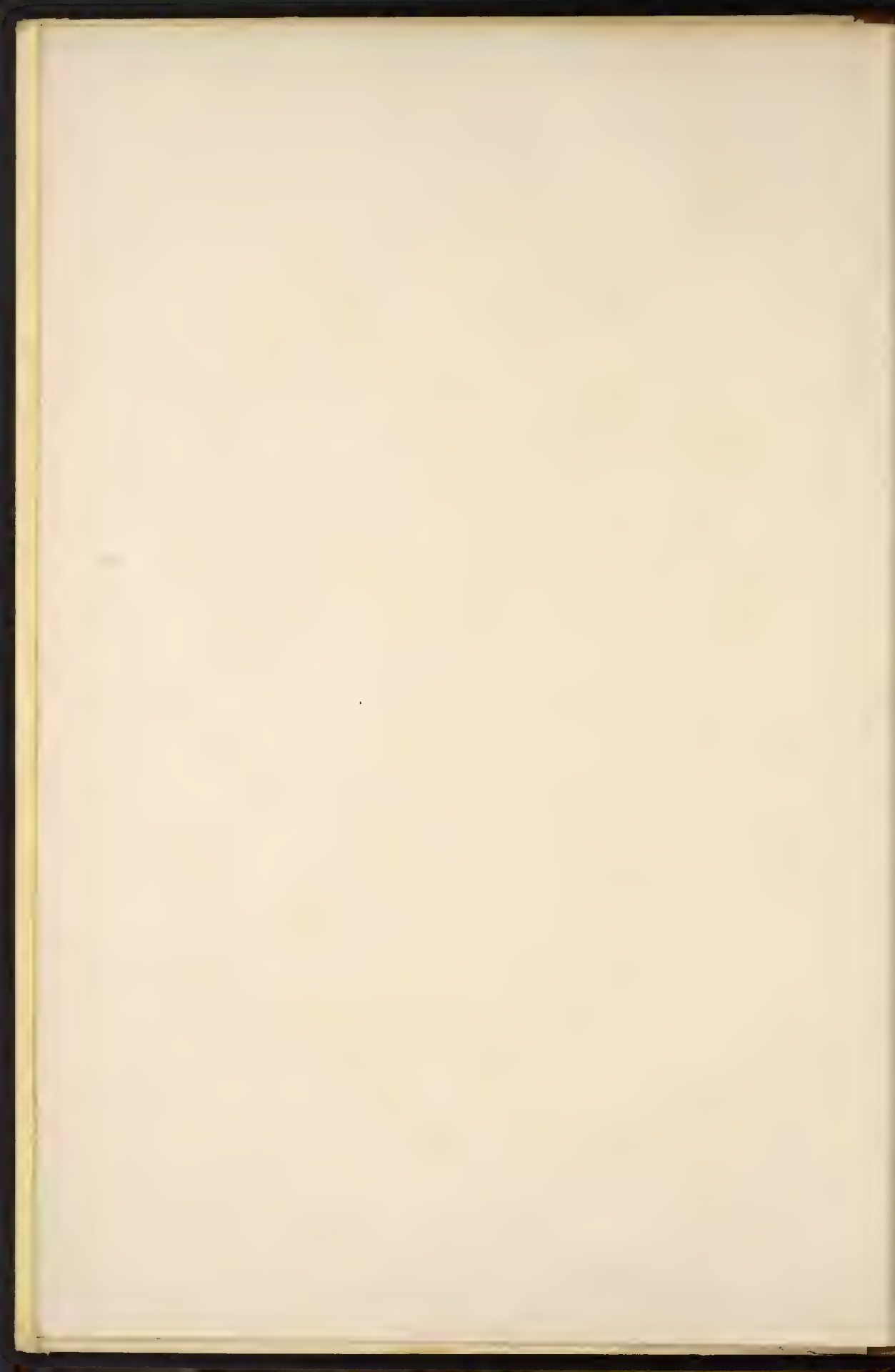
WITH HIS LORDSHIP'S KIND PERMISSION,

RESPECTFULLY DEDICATED.

BY

THE AUTHOR.

11, Park Street, Westminster,—August, 1848.



BRIEF HISTORICAL ESSAY

ON

THE ART OF MOSAIC.

THE word MOSAIC, in its most extended sense, may be employed to designate every combination of minute portions of any material, which can, by the connexion of parts in themselves inexpressive, be so arranged as to convey a feeling of unity, or of variety of design: the expression, thus understood, is susceptible of a very extensive application, and may especially be rendered subservient to the various purposes of architectural and artistic decoration.

In a less extensive sense, the art of working in mosaic is limited to the employment and arrangement of stones, marbles, and vitrified substances. Through the union of these ingredients it has, in former ages, found its most graceful embodiment; and it is under this aspect that we propose to enter upon a brief consideration of its past existence,—endeavouring to trace, as far as possible, any relation that may have obtained between the several forms it assumed at various periods, whether pictorial or conventional,—and the peculiar phase of architecture with which it has probably been associated. In this pursuit, we trust that our earnest though feeble endeavours will prove not altogether useless in aiding or in regulating the theory and practice of some who, in these days of revival and progress, may be anxious to recall to a fresh and vigorous existence a time-honoured and ingenious, though long neglected element in structural embellishment.

The three leading divisions—the *Ancient*, the *Mediæval*, and the *Modern*—into which general students are wont to separate the study of History, furnish a skeleton framework on which we may hang our “shreds and patches” of information most advantageously; since the principal changes that have occurred in the composition and application of Mosaic, assume their peculiar forms at the very points of time which mark the transition intervals between these several historic periods.

Arranging our subject, then, under these three leading heads, we shall assume the *Ancient* art of Mosaic to have been that practised by the great artists of antiquity, from the earliest ages down to the period of Constantine the Great, (A.D. 320); the second, or *Mediæval*, we shall describe as obtaining from the general adoption of Christian worship, to the revival of classical learning in the fifteenth century; and the third, or *Modern* style, may be considered to include all the varieties of incrustation which have been employed in public or private works, from the days of Raphael and Michael Angelo to the present time.

Firstly, then, with regard to the most *ancient* process of Mosaic,—we find that considerable mystery hangs over the earlier stages of its development. From the character of many of the painted Egyptian ornaments, and from the actual existence of many of their peculiar little amulets, in which stones and vitreous pastes are combined to produce chequered and striated effects, we must conclude that the art, in its minor form at least, was known to, and cultivated

by, that accomplished nation; but being, at the same time, obliged to confess that none of the Egyptian Mosaics we, at least, have had any opportunity of examining, exhibit the appearance of extreme antiquity, we infer that the art was not indigenous in Africa, but only imported thither from Greece or Italy, toward the Ptolemaic era.

That incusted flooring was known to the Persians in the days of Ahasuerus, we have direct testimony in the sixth verse of the first chapter of Esther, where it is mentioned, as an instance of the luxurious magnificence of the Royal palace of Shushan, that "the beds (couches) were of gold and silver, upon a pavement of red, and blue, and white marble." As to the nature of either the construction or design of this most ancient Mosaic, nothing now remains to impart information.

We may reasonably infer that, if not pre-existent in Greece, the practice may have been imported into that country through the many Persian invasions, and that spoils taken from the invaders in *war* may have conveyed to their conquerors important lessons in the arts of *peace*.

The veteran Müller, in his "Archæologie der Kunst," gives the most succinct account of Mosaic as practised by the Greeks, but we shall rather refer to the learned and clear notices collected by the Padre Secchi, and published by him in the introduction to his "Musæico Antoniano descritto e illustrato," (Rome, 1843). The worthy father tells us, that in the days of Alexander of Macedon, the luxury of pavements formed of various coloured marbles prevailed generally and extensively throughout Greece, and that the ornamentation bestowed on the ground frequently excelled that lavished on the walls and ceilings. He quotes Athenæus, who mentions that the ship of Geron contained a Mosaic, formed of "many stones in small fragments," (*ἡ πολλῶν λίθων ἐν ἀβασίταις*), which exhibited a representation of the whole story of the Iliad. He refers also to Claudius Galenus, who relates that Diogenes, the Cynic, having entered into a private dwelling, adorned with a pavement of the finest work, on which were figured all the Olympian deities, turning round, spat in the face of his noble host, comforting him at the same time with the compliment, that it was the least noble spot he could select in his whole house. The terms *λίθοστροτον*, (used by Hesiod and Sophocles), and *λίθολογημα*, (employed by Xenophon in the *Ciropeia*), appear the original appellations for Mosaic, since the words *μουσαϊσμός* and *μουσαϊσμός* belong only to a late period, and may almost be deemed barbarous Greek. Pliny makes mention of several artists of celebrity, especially of Sosos, a mosaic worker of Pergamos, several of whose marvellous productions he describes. It is probable, however, that scarcely any specimens of pure Greek art have descended intact to our day; and the enthusiastic admiration expressed by Roman authors of the labours of the Greeks in such works of ingenuity greatly enhances their loss. In the year 1763, A.D., a Mosaic was found in a villa near Pompeii, (probably that of the Emperor Claudius), representing three masqued females playing on musical instruments: although inscribed "Dioscorides of Samos," in Greek characters, we cannot but fear that the inscription indicates not the actual artist, but merely the original inventor of the design.

Since the foolish prejudice that Grecian architecture must necessarily be plain, colourless, and unadorned—because to our eyes shorn, by time and other causes, of the ornamental adjuncts which were wont to accompany its perfect development—has happily passed away, we may now readily conceive how willingly the Greek architects would have added to the graces of their designs the elegant art of which we are now treating. Their fondness for the union of gold, ebony, ivory, bronze, in Toreutic and Chryselephantine work, exhibits their tendency to the Mosaic process; and several of the more recently discovered polychromatic patterns which have adorned their temples demonstrate how fully they appreciated, and how readily they adopted the ever fresh and varying arrangement of rectangular forms, suggested by the combination of the simpler geometric tesserae.

In approaching the subject of Roman Mosaic, we cannot avoid pausing to remark how strong a corroboration Victor Hugo's fine observation, that the "history of every great country is inscribed upon its monuments," receives from the extreme popularity this art attained among a people whose thoughts, mythology, social habits, and systems of philosophy, exhibited only one vast Mosaic, made up of precious fragments from the East and from the West, put

together, arranged, and maintained in a magnificent and imposing form, by native ability, on their grand system of faith in the advantages of compact and indissoluble union.

The first authentic account to be found of the appearance of the "Opus Musivum" in the eternal City, is that given us by Pliny, who states Scylla to have been the first Roman who caused to be produced any specimens of the "opus lithostrotum," (literally, stone-laid work); and according to his and many other sources of evidence, we may be justified in assuming the date of its introduction to have been about eighty years before Christ.

Furietti, the most learned and elaborate writer on the subject, frames an ingenious theory as to the Greek origin of Mosaic-work in Rome: he supposes that many spoils brought from Greece, and deposited in the temple of Jupiter Capitolinus, may have been adopted as decorations, and thus prefigured ideas from which the Roman artists would doubtless derive important practical lessons; which, creating in the minds of the ostentatious and magnificent patri-cians an anxiety for the possession of other luxurious embellishments, would thus introduce to them Mosaic.

This theory receives corroboration in several ways:—firstly, from the fact, that Pliny has described the pavement of this temple of Jupiter as one of the earliest and most beautiful of its kind; secondly, in that the period of the introduction of the art into Rome corresponds with the destruction of Corinth, and the victories of the Consul Mummius, when great and precious spoils are recorded to have been brought into the city; and thirdly, from the circumstance that the inscriptions on the celebrated Barberini Mosaic, still preserved in nearly its original position in the Temple of Fortune at Palestrina, (the ancient Praeneste), and known to have been placed there by Scylla, to atone for his former cruelty in the destruction of the town and slaughter of its inhabitants, are entirely written in Greek characters.

A strong proof of the rapidity with which the art was appropriated by the Romans, and naturalized in their soil, may be found in their almost immediate formation of a vocabulary to express all the varieties and manufacturing details of its process of formation. The endeavour to attach a clear and definite meaning to all the terms (thus introduced) has long been a favourite subject of debate among the Vitruvian commentators; and the attempt to distinguish with tolerable accuracy between the conditions of all the modes of fabrication employed in the decoration of the public and private buildings of Rome, though often made, has not as yet, in any one instance, been crowned with perfect and complete success. The learned and enthusiastic Ciampini, in his invaluable "*Vetera monumenta in quibus precipue Musiva opera illustrantur*," has perhaps approached an intelligible explanation more nearly than any other antiquary: we shall, therefore, in our endeavour to convey some idea of the peculiarities of each species of Roman mosaic, adopt, as far as possible, his analysis of the subject.

He divides the art into four principal sections, namely—

- | | |
|-------------------|--|
| I. TESSELATUM, | } applied to pavements generally. |
| II. SECTILE, | |
| III. FIGLINUM, | } usually applied to walls and vaults. |
| IV. VERMICULATUM, | |

Of these, the first, the "*Opus Tessellatum*," is probably the most ancient. It consisted of small cubes of marble, seldom averaging more than three-quarters of an inch square, sawn or worked by hand into such simple geometrical figures as, when combined, would best compose a figure, equally geometrical, but of course characterised by a greater degree of intricacy. The ornament, generally called the Greek fret, was one constantly worked out in this material; and various graceful combinations of square and circular lines are of frequent recurrence. The small cubes were called *tesserae*. It is probable that the first colours employed were chiefly black and white, and that the general introduction of red, blue, and yellow, was subsequent to the invention of the Opus Figlinum. The best examples of the "Opus Tessellatum" occur at Pompeii, in the Sala of the Nuovo Braccio in the Vatican, and in the Baths of Caracalla: many very fine specimens have also been found in this country. *Tesserae* are but rarely found on walls, excepting when they

are adopted to form flat tints of uniform colour, as in the large black and white Mosaics which have fallen from the vaults of the Baths, and some other buildings, at Rome.

Our second variety, the "*Opus Sectile*," was formed (as its name imports) of "Sectilia," which Ciampini describes as "the different crusta (or slices) of marble, of which *figures* and ornaments were made." With this definition we must not, however, rest quite contented, since the testimony of Vitruvius, corroborated by the judgment of Furietti and his most learned commentators, leads us to quite a contrary conclusion. According to them, it would appear to have been composed, not of little cubes like *Tesselatum*, but of large thin slices of marble—never imitating the forms of actual subjects, as Ciampini would infer, but producing a pleasing effect solely through the shape, colour, and vein of the different slabs of marble opposed and contrasted.

Neither in the Vatican at Rome, the Studii at Naples, nor in any other European Museum to which the Author has been enabled to procure access, has he met with a single fragment of ancient *Opus Sectile* imitating any existing object. Had it been at all customary to employ it in this manner, evidence would doubtless have remained *in situ* at Pompeii,—since there the student may find, in their original juxtaposition, specimens of all varieties of the Mosaic art known to either Greek or Roman.

Furietti, in speaking of sectile work, says that Vitruvius first established a clear difference between *tesserae* and *sectilia*, in these words, "*Supra nucleam, ad regulam et libellam, exacta pavimenta struantur, sive sectilibus, sive tesserais*"—that is, "Upon the bedding, pavements are to be laid, according to rule and level, either in *sectilia* or with *tesserae*." He (Vitruvius) further says, that if the floor be made of *sectilia* (the before described *crusta*), "care must be taken not to have one edge rising against another, so as to form a step." This direction he could not have given had these slices been used in such small pieces as would have been necessary to compose the *figures* and *ornaments* mentioned by Ciampini. Still further corroborating our view of the subject, in speaking of tessellated work, he directs "that care should be taken to make all angles equal, so that no particles may be left standing up above the others to get rubbed by the foot."

The date of the first introduction of this species of Mosaic may be assumed at about fifty years before Christ, and the most noble specimen of it now extant is the splendid pavement of the Pantheon at Rome, in which the several slices are of very great superficial extent. Porphyry, Giallo Antico, and Pavonazzetto are the principal marbles employed, and they are arranged simply in alternate round and square slabs. As the building, according to the inscription on the frieze, was finished during the third Consulate of Agrippa, B.C. 26, and must necessarily have taken a long time to complete, it is probable that the pavement was laid down some years before that period. The construction of *Opus Sectile* imperatively demanding the employment of costly marbles, it cannot reasonably be expected to exhibit itself in the northern latitudes; it becomes, therefore, a matter of small surprise that no remains of this peculiar process should have been discovered either in our own or any other European country, except Italy.

Having now briefly noticed the general conditions attaching to these two kinds of ancient *Mosaic pavements*, we shall proceed to describe those varieties of the art which were usually applied by the Romans to mural decoration. Assuming that their first labours were confined to the production of tessellated work, composed of cubes of stone or marble, in regular geometrical figures, we may imagine that a short experience would demonstrate to them the necessity of providing themselves, in the first place, with a more extended scale of shades and colours; and, in the second, with such a process for the arbitrary formation of material as should enable their artists to apply the principle of Mosaic arrangement to the imitation of pictorial forms. The former want was supplied by the *Opus Figlinum*, the latter by the *Opus Vermiculatum*.

Our third great generic variety, "the *Opus Figlinum*," or "fictile work," would appear to have been what is now generally called "*lavoro di smalto*,"—that is, mosaic composed of minute portions of a compound of silex and alumina, (coloured by the addition of one of the metallic oxides,) but possessed of a much larger proportion of the former

material than now in use by the modern Italians. The following passage from Pliny, lib. 36, cap. 25, fully illustrates its historic position. He says, "Lithostrata creptavêre jam sub Scyllâ parvulis certe crustis, extat hodieque, quod in Fortunæ delubro Præneste fecit. Pulsa deinde ex humo pavimenta in camera transiere e vitro: novitium et hoc inventum Agrippa certe in Thermis, quas Romæ fecit, figlinum opus encausto pinxit; in reliquis albaria adornavit, non dubie vitreas facturas camera, si prius inventum id fuisset, aut a parietibus scenæ, ut diximus Scauri pervenisset in camera." This Scaurus, Ciampini asserts, was the first who covered the scenes of the theatres with marble veneering.

The principal advantages offered by this material—through the nature of which it very shortly, and to a great extent, superseded the use of other substances in Mosaic—were, that owing to the conditions of its manufacture, it could be obtained of any variety of colour, from the most delicate to the most intense; that its exceeding brittleness rendered it susceptible of being easily reduced to any given form; that it was far less costly than the precious marbles; and finally, that it was possible to cover it with an untarnishable gilding. Supported by these merits, it very speedily advanced into almost universal popularity; and, from the earliest imperial ages, we find the prevailing luxury in the use of "Vitrea parietes" adopted as an ordinary theme for the satire of those poets who bewailed "the follies of the day," and imputed them to the constant effort of each succeeding generation to tread out the footmarks of its forefathers.

These "glassy walls" are frequently described as "cum auro superinducto," that is, with gold laid over; and this phrase aptly designates the process adopted in the manufacture of the gold-grounded tesserae existing at Pompeii.

On a piece of vitreous compound—in shape and size like a thin tile, and unburnt—was laid a sheet of glass, over that a piece of gold-leaf, surmounted by another sheet of very fine glass; the whole being then placed in the kiln, was burnt to such a point as to render the union of the parts perfect, and make the whole tile homogeneous in substance. It was then broken up to the sizes required for the particular ornament to be executed.

Though specimens composed solely of the *Opus Figlinum* are occasionally met with, this material is more usually found in conjunction with small fragments of marble, and even of gems, when they unite to produce our fourth class, the *Opus Vermiculatum*. Thus, in all the pavements hitherto discovered in England, those colours which could not readily be obtained by the employment of the different stones found in the neighbourhood, were supplied in a sort of earthy fictile work—which has not, however, in any example hitherto discovered, that perfect semi-transparency which characterizes the Italian "smalto."

It may be well to mention here, that scarcely any traces now remain of the Baths of Agrippa, that building erected behind the Pantheon about twenty-four years before Christ, into the design of which, Pliny tells us, the *Opus Figlinum* was first introduced.

We now come to the most elaborate of our four varieties—the *Opus Vermiculatum*, which was limited to the direct imitation of figures, ornaments, pictures; the whole object being portrayed in all its true colours, shades, and reflexes, by means of a judicious arrangement of small cubes of different coloured marbles; and, where extreme brilliancy of tint was required, by the aid of gems, and of the *Opus Figlinum*.

This division embraces by far the largest number, and the choicest specimens of those examples of Mosaic, which the consuming hand of time has spared,—apparently to impress us with veneration for the minute skill and patient elaboration which characterize the works of all the great masters of antiquity. In order to classify with some distinctness these highly-interesting monuments, the best and most learned writers on the subject have agreed to subdivide the *Opus Vermiculatum* into the three following varieties—applicable rather to *scale* than to any fundamental difference. These are

- I. THE MAJOR—applying to vaults, sometimes to pavements.
- II. THE MEDIUM—to walls generally.
- III. THE MINOR WORK—to pictures and portable ornaments.

The method of elaboration applied to works in this major key was, as may be imagined, somewhat rude, the curved lines being frequently represented by a series of squares dropping one below another, and many similar barbarities were perpetrated, such as are not apt to be tolerated at the present day—unless, indeed, by the virtuosi in modern *worsted* work.

The "Opus Majus" was generally employed in large pavements, or in ceilings, and represented the figures of gods, centaurs, heroes, and genii. It was very commonly executed in black and white marble only. In the fine specimens which have been found in the Baths of Caracalla, the figures are gigantic, and have been executed with wonderful spirit; the cubes, however, are very large, and the work is altogether of a coarse description. Most of the fragments of Mosaic found in England are of this variety, and some possess considerable merit.

Scarcely any building of magnitude was erected at Rome into the service of whose decoration this useful kind of ornament was not introduced: the reliques which have descended to our days are consequently sufficiently numerous, though not generally existing in the best preservation. In the entrance to the great Mosaic depository at the Vatican, in the Nuovo Braccio of the Chiaramonti Museum, and in some of the houses at Pompeii, we meet with pleasing specimens of this work, which appear very coarse when close to the eye, yet, being always well and boldly drawn, produce at a distance an admirable effect.

In this "Opus Majus," though the stones composing the forms are not always of a regular shape, they more nearly approach the square than in any of the smaller styles; and a great part of the flat tints, the ground, and large draperies, are filled in with regular square tesserae, thus forming a mixture of *opera tessellata* and *vermiculata*.

The "Medium" was a much finer kind of work, and in it were generally executed such subjects as required greater delicacy in the treatment, and more softness in the shades and tints—such as Cupids, flowers, figures, festoons. Some beautiful specimens have been found at Pompeii, where they have been used as pavements in the most honourable parts of some of the richest houses. Notwithstanding these instances, however, we have good grounds for the belief that this *modus operandi* was most commonly adopted as a mural decoration.

The celebrated great Mosaic of Pompeii is of medium work; and among many other fragments of great beauty in this class, preserved in the Vatican, may be particularized the finely-executed head of Minerva, surrounded by graceful ornaments, occupying the centre of the Hall of the Greek Cross; and the elaborate battle of the Centaurs and Lapiths, found at Otricoli in the year 1780, which now decorates the pavement of the adjoining saloon.

The *Minus* "Opus Vermiculatum" was the finest and most elaborate of all the ancient Roman varieties, and consisted of the most delicate pictures, formed entirely by minute pieces of marble and fictile work—many of the little strips being less than the twentieth of an inch across.

Ciampini concludes that the finest productions of the Mosaic artists were esteemed and regarded by the ancients in the light in which we are wont to consider pictures in the present day—merely as pieces of portable furniture; but in opposition to his opinion may be adduced several specimens of great beauty found inserted in the pavements at Pompeii.

The most generally known, and by far the most exquisite example of this art still existing, is the picture usually called "Pliny's Doves." Through the numerous modern repetitions of this work annually manufactured, its general outline and character must be familiar to every one. None, certainly, but those who have seen the original, can conceive an accurate notion of the delicacy and taste displayed in its formation. It is preserved in the Museum of the Capitol at Rome, and represents a metal bason, on the edge of which four doves are sitting; one of them is stooping to drink, and not only the shadow cast by it, but even the reflection of part of the head in the water, is beautifully given. The execution of the plumage, the heads, and eyes, is most minute, and is as refined as the idea and composition of the whole are graceful and captivating. It acquired its usual appellation from the circumstance recorded by Pliny, that Sosos of Pergamos had surpassed, in the elaboration of a Mosaic of similar design, every pre-existing attempt. It

was found, (as Cardinal Furietti tells us, in his treatise on Mosaic,) after much toil in searching for such objects, in the gardens of Hadrian's Villa at Tivoli, in the year 1737, and was afterwards sold by him to Clement XIII. (Carlo Rezzonico). It is tolerably well engraved, in black and white, in the Cardinal's interesting essay. The original most exquisite relic enables us to guess at what may have been the perfection of those pictures, the value of which, we are assured, exceeded that of many towns!

As a general rule, it may be assumed that the "Opus Minus Vermiculatum" was most highly polished; the Medium less brilliantly; the Majus only so far rubbed down, as to prevent any considerable inequality of surface.

Although the four great divisions we have enumerated include the leading characteristics of Roman Mosaic, there yet remain to be glanced at two or three peculiarities, which form, as it were, the exceptions to our rule, the "*Lusus musivæ naturæ*." The first to which we shall allude, is what was called by Pliny, "*Asaroton æcon*," and consisted of a minute kind of "*Opus Figlinum*," or "*Vermiculatum*," which was limited in its design to a representation of such fragments as might be supposed to have fallen from a luxuriously spread table to the floor of the Triclinium. This somewhat puerile conceit found its admirers among the emasculate Romans; and even the learned Pliny commends it as an ingenious notion. One interesting specimen is still preserved in the Museum of the Vatican. Pliny and Bulengerus agree in ascribing its invention to Sosos of Pergamos, the immortal author of the immortal doves.

The second may be termed the "*Opus Incertum*" of Mosaic, since it is composed of all sorts and kinds of marble, put together in irregular shapes, and when united into a mass with cement, and laid upon the floor prepared to receive them, reduced to a polished face by friction. Several examples of this kind of performance may yet be seen at Pompeii; and, where cement can be procured, rivalling in hardness and beauty the time-honoured Pozzolana, it would be difficult to imagine a more elegant and durable pavement. This work is almost precisely similar in mode of execution to the Venetian *Pisé* floor, and the common Italian *Trazzo*, so much in use in the present day.

The third, and perhaps most eccentric of all modes of working in Mosaic, was that of applying the coloured cubes of marble, fictilia, and some other substances, to surfaces in relief, by covering a rude mezzo-relievo with plaster, and then cutting away portions of the surface, and replacing the parts so removed with delicate tessellation. A remarkably interesting specimen of this peculiar process was lately in the collection of the Cavaliere Sant' Angelo, at Naples; it had been discovered at Metapontum, an ancient city near the modern Taranto.

In order to complete our sketch of the practical details of the art under the Romans, two points remain to be noticed; first, the nature of the cement employed by them to attach the tesserae to each other; secondly, the particular bedding on which they were wont to lay down their coatings of Mosaic.

The cement commonly used by the ancients consisted of a mixture of slaked lime and powdered marble, in the proportion of one of the former to three of the latter, blended with water and the white of eggs. This "*marmoratum*," as it was called, though intensely hard, and very fine, possessed the disadvantage of setting almost immediately after its application; so that it was found impossible to displace any of the work, even to make a trifling alteration, without destroying almost the whole of that previously executed.

The preparation for the reception of the Mosaic, in ordinary use at Rome, was made in the following manner. A layer of large stones or flints, with but very little cement, was first placed on the ground. Upon this was spread a course of concrete, composed of smaller stones and lime, in the general proportion of five to two, which was beaten and pressed down with great care, until its thickness was reduced from about one foot to nine inches. This process of beating was called "*rudratio*;" the stratum itself, "*rudus*." The third layer, which consisted of a kind of cement called "*nucleus*," composed of one part lime and three of broken brick, shards, &c., was then worked to a true face, and on it was drawn the outline of the pattern. The tesserae, or small pieces of Mosaic, were then placed, and over the whole was poured liquid cement, so as perfectly to fill up the interstices between the cubes. After the superfluous

cement had been removed, all slight inequalities were reduced by friction with pieces of marble; and thus the whole was brought to one uniform surface.

Having now enumerated most of the leading practical facts, which in ancient times were connected with the *mechanism* of the art in Italy, we proceed to resume the thread of our general historical notice.

Catullus informs us that Mamurra was the first who employed Mosaic to decorate the walls of his house. Pompey is described as bearing, in his triumphs after the wars of Pontus, his portrait made of gems and pearls; we may imagine, therefore, that even in his time the *Minus Opus Vermiculatum* had advanced to a considerable state of perfection.

Cicero describes the pavement of his house to have been of *Opus Lithostratum*. Julius Cæsar is mentioned by Suetonius as having been peculiarly attached to this species of decoration, and was accustomed, even in his campaigns and progresses, to carry with him inlaid pavement for the adornment of his tent. Furietti, in addition to the Barberini (Palestrina) Mosaic, alludes to several others, which he ascribes to the Republican period, and dwells particularly on two; one found on Mount Aventinus, and believed to have belonged to a temple of Hercules; the other, supposed to have formed part of a temple to the god Alexis. Some idea of the very general employment of Mosaic, at the commencement of the imperial era, may be gathered from a quotation derived by Bulengerus from Seneca, who exclaims, "that he should indeed consider himself poor and sordid, if the walls of his house were not adorned with Alexandrian marbles, in Numidian *Settilia*, (*crusta*)."

During the reign of the twelve Cæsars, Mosaic rose to an unexampled popularity, and its artificers were among the most honoured in the city. The prevalence of this fashion and feeling was doubtless much promoted by the enormous accumulation of precious material introduced into Rome after each successive conquest.

From the monuments of every kind still existing, the art would appear to have arrived at its highest perfection during the reign of Hadrian, (A.D. 117 to 138); and for 100 years before that period, there is little doubt that no building of any importance was erected which did not largely involve the employment of this most graceful embellishment.

Scarcely a single residence of any size at Pompeii (overwhelmed A.D. 79) is to be found unadorned with elegant pavement, either in tessellation or vermiculation. Wherever excavations have been made in Rome, the original levels may be predicated with comparative certainty from the strata of tesserae usually found. Wherever Roman energy planted its foot, traces may be seen of this cherished art. In Spain, at Barcelona, Relves, Fumella, and Italica, (near Seville)—in France, at Besançon, Metz, Aix-en-Provence—in England, at Woodchester, Cirencester, Combe End, in Gloucestershire; Mansfield and Wodehouse, Notts; Caerwent, Monmouthshire; Northleigh and Banbury, Oxon; Frampton, Dorset; Horkstow, Roxby, and Scamton, in Lincolnshire; Bignor, in Sussex; and Littlecot, in Wiltshire; very interesting specimens have been found, and many more, doubtless, remain to reward the exertions of the enterprising antiquary. A few are preserved in the British Museum, but none there are of extreme interest. The best is a small portion of the great Woodchester pavement, presented by Mr. Lysons.

The most ancient Mosaic that has been discovered, displaying Christian workmanship, is probably the one found in this country at Horkstow, in Lincolnshire, where, in conjunction with the usual Roman frets and ornaments, are to be seen one of the monograms in use among the early Christians, and a repetition of the Ichthus, or fish, one of their earliest and most sacred symbols. This Mosaic is supposed to be earlier than the time of Constantine the Great, and possesses the highest interest.

From the reign of Hadrian to that of Caracalla, the art appears to have lost in quality what it gained in the quantity of its specimens; and after the year 220 it became obscured by clouds, portending and preceding that tremendous storm which, sweeping the Roman empire from the earth, substituted a barbaric splendour for the courtly and effeminate magnificence of the former "mistress of the world."

On the dispersion of this storm, appeared Christianity; leading the human race to a hope and belief different from those

previously entertained,—and, as the faith was different, so were the fruits. None of the sciences remained unchanged; and from the era of Constantine, regeneration is as apparent and essential an element in the fine arts as in the religion of the world.

Before proceeding to the second division of our subject, the *Mediæval* or Christian Mosaic, it may not be useless to remark, that although the *manufacturing* processes connected with *ancient* work divide themselves into the sections we have detailed, the *æsthetic* or theoretic portion of the science takes cognizance only of two distinctions—the one imitation,—the other convention. To the former class belong all specimens produced through the medium of the *Opus Vermiculatum*, and to the latter most of the other varieties.

In examining the nature of the subjects selected for representation in pictorial or imitative Mosaic, the student cannot but be struck by the wide range embraced and the evidence of intellect or of popular education—sometimes both—manifested in the selection or appropriation of the various themes. Gods, centaurs, men, animals, landscapes, flowers, ornaments, foliage, are depicted with almost equal ability; and we must remember that, it is to the durability of the materials of which these almost imperishable relics are composed, we are indebted for the preservation of many of the lovely fancies of the great artists of antiquity—whose creations might otherwise have altogether passed away. Bearing in mind, too, the constant practice of reproduction and repetition prevalent among artists and artisans of old, we must not refuse to ascribe the invention, composition, and artistic treatment of any popular legend to a master mind, merely because we meet with its representation in fragments of coarse and, perhaps, ill-drawn Mosaic, or in a mural painting indifferently executed.

When we consider, moreover, the appropriation of these subjects, and their relation to the positions for which they were designed, we cannot fail to be struck with the general congruity existing between the nature of the idea depicted and the character of the apartment to be adorned. Thus, in the houses at Pompeii, we find portrayed in Mosaic the faithful dog guarding the threshold, or the hospitable inscription, hailing and welcoming the visitor with a kindly “salve,” even in the doorway;—in the Atrium, or hall, a rich though simple pattern is elaborated;—in the Triclinium, or dining-room, we meet with the “*Opus Asaroton*,” or representation of fragments of food dispersed upon the ground;—in the Gynæceum, or female apartments, compositions of ornament, foliage, animals of the greatest delicacy;—in the grottoes for the preservation of the Lares, or household gods, and in the pavements near them, are to be found the noblest subjects and the most refined and admirable works of art. This happy unity of idea is extended and enhanced by a similar taste displayed in the distribution of the other pictorial embellishments. What a lesson should not this afford to those who daily heap together in the decoration of their apartments the most incongruous ideas and the least harmonious associations,—who place an Annunciation in a dining-room, flanked by a sporting print and the “portrait of a gentleman!”

Turning our attention to the structure and condition of ancient conventional, or purely architectonic design, as applied to Mosaic work, and examining the relations subsisting between its lines and colours and those of the adjacent architectural members, we cannot but observe the skill with which they have been both arranged and contrasted. Thus, the minute and frequently recurring patterns met with at Pompeii, in the cubicula and in the smaller chambers, were adapted to give scale to the rooms; and, from their strictly regular and geometrical character, to cause the eye to dwell with increased pleasure on the flowing and playful forms of the paintings executed upon the walls: in much the same way the rectilinear lines of the pavement of the Pantheon enhance the beauty of the graceful curves of the dome and its *lacunaria*.

The excellent critical rules laid down by Mr. Pugin, in his “*True Principles*,” for the design of floors in tessellation and encaustic, were seldom vitiated by the Romans, and any attempt to give to architectural ornaments, so represented, the appearance of relief, is by no means to be frequently met with. An inspection of the large series of prints published by the Società Calografica at Rome,—the plates to Mazoi’s Pompeii,—Fowler’s rare and beautiful coloured engravings

of English tessellated pavements, and the Comte de la Borde's admirably executed illustrations of the exquisite pavement of Opus Vermiculatum discovered at Italica, near Seville, will furnish the student with a tolerably just idea of the externals of ancient Mosaic, and enable him to appreciate, to a certain extent, the taste and ingenuity displayed in their formation.

During the *Medieval* or *Christian* period—the second portion of our essay—we find that between the time of Constantine, A.D. 330, and the fourteenth century, three varieties arose which obtained universally in Italy, and during nearly 1000 years changed but little either in principle or composition—with the exception, of course, that as the art of design progressed, so did the power of drawing and giving expression to the nude and foliage naturally expand.

The only specimen remaining, executed in the old manner, after the religious alterations effected in Italy, appears to be that curious incrustation which lines the vaulting of the Baptistery erected by Constantine, dedicated to Santa Costanza, and to be found near the Basilica of "Sant' Agnese fuori le Mura, Rome." It represents a vine, covering as it were the whole roof; it is, in fact, a *pergola*, and has introduced among the leaves many Christian symbols. The style is mixed Opus Tessellatum and Vermiculatum (*majus* and *medium*), and it exhibits none of the characteristics of the three styles we are about to describe. These consisted in—

I. GLASS MOSAIC, called generally Opus Musivum,—imitative; used for walls and vaults.

II. GLASS TESSELLATION, called generally Opus Greecanicum,—conventional; generally inlaid in church furniture.

III. MARBLE TESSELLATION, called indifferently Greecanicum and Alexandrinum,—conventional; formed into pavements.

When, in the year 329, the seat of empire was removed to Constantinople, it may be believed that many Roman workers in Mosaic migrated with the court, and through their labours some of the first churches erected by Constantine were probably decorated. Owing to their then already degenerate condition, and to the distance from good existing models, their hereditary predilections would desert them, and they would naturally be in a condition to receive impressions, tending to the modification of their system of production, from new objects and strange fashions presented to their view. From them the art was doubtless handed down traditionally, but in its character effectively changed by its transmission. The oriental taste for gold and splendour soon superseded the purer practice of the Romans,—and Byzantine *Glass Mosaic* started into life.

There seems every reason to conclude that for many centuries the Greeks remained almost the exclusive workmen and designers in Mosaic; and, through their ingenuity, Italy and Sicily stand pre-eminent in the possession of Churches and Baptisteries, whose walls are adorned with the gilded ground and the gorgeously draped and swarthy visaged saints peculiarly Byzantine.

Byzantium, Asia Minor, and the Holy Land, once doubtless possessed many noble specimens of Greek Christian art; but the elements, wars, fires, and Mahometan whitewash have deprived us of almost all those sources whence modern oriental art probably derived much of its inspiration and most of the peculiar features of its character. It is in connexion with this branch of the subject that the interesting question arises, respecting the influence that the early decorative processes may have had in determining the subsequent character of conventional ornament in all styles. Thus, the Arabs having at first adopted the general scheme of Byzantine architecture, and among its processes that of Mosaic, the style, from want of drawings of detail and of Greek architects, declined in its integrity; while the mechanical processes being retained traditionally among the workmen, this very Mosaic work, at first only a subordinate means of decorations, would become a leading element in the minds of the Mahometan designers. From experiments and combinations with small geometrical cubes of glass Mosaic, they would be led not unnaturally to that elaborate and intricate style of pattern which, when they emerged at length from the influence of Byzantine tradition, became an essential characteristic of their compositions. Thus, also, no doubt, did the ancient predilection for Mosaic modify most materially not only the plan and whole structure of the churches erected in Italy down to the year 1200, but even the minor details that characterize and constitute the style of those monuments.

The view we have ventured to express concerning the influence exerted by Mosaic on Arab art receives a curious corroboration from a fact quoted by Mr. Hendrie, in one of the notes to his learned and most valuable work on Theophilus. He tells us, "that it appears, from the chronicle of the Patriarch Eutichius, that when the Mussulmen invaded Palestine for the first time, they found the Church of Bethlehem, built by St. Helena, ornamented with *faefests* (a word derived by the Arabs from the Greeks, and signifying an arrangement of small stones). According to Ebn Sayd, one of the conditions of the peace concluded between the Caliph Valid and the Greek Emperor was, that the latter should furnish a certain quantity of 'faefysa' for the decoration of the Mosque of Damascus, which the Caliph was then constructing." These "faefysa," M. Didron (the greatest authority on such a point) clearly identifies with the *ψήφοι χρυσοί* (golden Mosaics) of the Greeks. "These," he says, "are the Mosaics which cover the vaults, cupolas, and a part of the walls of Santa Sophia of Constantinople, of Vatopedi and of Saint Laura of Mount Athos, of Daphne near Athens, of St. Luke in Livadia, of the round temples of Salonica and of Ravenna. Mosaic is Byzantine and Christian; and the Arabs, who have merely a *borrowed* architecture, have even borrowed a great portion of their embellishment."

To return from these hazardous though most interesting hypotheses to the regions of reality, and our description of the first division of Christian Mosaic, we may remark, as its chief and leading peculiarity, that it was employed only to represent and reproduce the forms of existing objects, such as figures, architectural forms, and conventional foliage, which were generally relieved with some slight indication of shading upon a gold ground,—the whole being bedded on the cement covering the walls and vaults of the Basilicas and Churches.

The design of both figures and ornaments—as may be seen by consulting the great work of Seroux d'Agincourt, recently translated by Mr. Owen Jones,* the plates to Gutensohn and Knapp's "Basiliken Christlichen Roms," or those in Ciampini's "Vetere Monumenta,"—was, generally speaking, very rude, though not without an occasional rising, in some of the figures, to a certain sublimity, derivable principally from the great simplicity of the forms and draperies, and the earnest *grandiose* expression depicted in their countenances. Perhaps the most striking example of this peculiar majesty is to be found in the enormous half-length figure of our Saviour, in the act of benediction, which occupies the semidome of the apse in the cathedral at Monreale, near Palermo, in Sicily. The ornament, in general, is of a far better class of design when imbued with somewhat of a Saracenic or Oriental taste—as in all the Mosaic work to be found in Sicily—than when, as in most of the churches in Rome, its style of convention has been modified by old Roman fragments, paralysing, it would seem, the feeble judgment of the designer. Where entirely removed from such an influence, as at Venice, Ravenna, and Ancona, this species of Mosaic assumes a far more original and peculiar style of beauty.

The pieces of glass employed in the formation of this work are of very irregular shapes and sizes, of all colours and tones of colour, and the ground-tint almost invariably prevailing is gold. The manner of execution is always large and coarse, and rarely approaches in neatness of joint, and regularity of bedding, even the "*Opus majus Vermiculatum*;" yet, notwithstanding these blemishes, the effect of gorgeous, luxurious, and, at the same time, solemn decoration produced is unattainable by any other means the author has found employed in structural embellishment. How noble and truly ecclesiastical in character the gold-clad interiors of Monreale Cathedral, of the Capella Palatina at Palermo, of St. Mark's at Venice, San Miniato at Florence, or Santi Apollinare and Vitale at Ravenna are, the concurrent testimony of all travellers attests!

According to the opinion of Mr. Hope, expressed in his admirable Essay on Architecture, this kind of work derives its origin, if not its entire execution, from Byzantium; and though some of the Italian writers (Cicognara especially) endeavour to establish a claim for the integrity of Italian and Sicilian schools of Mosaic, not dependent on the Greeks, there seems little reason to doubt that the conclusion of Mr. Hope, supported, too, by the clear and learned judgment

* Longman & Co.

of Lord Lindsay, is correct. His Lordship thus expresses himself on the subject:—"Greek artists were employed in every church of consequence to decorate it with appropriate Mosaic work; and though there may be reason to believe that the Latins, after a while, learnt to execute for themselves the 'Opus Grecanicum' which composed the pavement, and that finer incrustation which embellished the ciboria and reading-desks, it appears certain that their enterprise soared no higher, and that the execution of those extensive and more intricate compositions, whether symbolical or dramatic, that adorned the walls, tribunes, and cupolas, remained, as late as the twelfth and thirteenth centuries, the exclusive monopoly of Byzantium."

One curious fact, strongly corroborative of this opinion, is mentioned by Leo Ostiensis, (quoted by Ciampini, Muratori, and others), in his description of the monastery at Monte Cassino (near San Germano, Regno di Napoli). It appears "that a certain Cardinal Desiderius wishing, in the year 1066, to raise a church to the honour of St. Benedict, sent to Constantinople for masters skilled in Mosaic, (in arte musivâ), and also in tessellation, (in arte quadrateriâ), of whom some should decorate the apse, its arch, and the vestibule of the church, and others form the pavement; and in order that the art might not perish in Italy, he caused (Deo co-operante) many youths of the monastery to be diligently instructed in the art." From this passage it may be inferred that, up to the year 1066, Italy possessed no other workmen and designers of Mosaic than those she derived from Greece, since it is not probable that one then at the head of the most able and influential religious order of the time, and possessing the knowledge and power of Desiderius, would have failed in commanding any native talent, had it then existed in Italy.

The two earliest glass Mosaics of the Christian era, which either exist, or of whose existence we have certain evidence, possess an extraordinary interest in connexion with the study of Iconography. The most ancient, which was traditionally related to have been given to Prudentius, a Roman patrician, by St. Peter, and which is referred to by Church writers of the fourth century, was stated by M. Frelet, at the *séance* held in 1841 at Lyons, by the French Society "for the preservation of monuments," to be worthy of regard, as probably the primary type for the appearance of our Saviour; and he further observed, that the pious duty of imitating this Mosaic in after examples, was one of the great causes of the general resemblance of physiognomy in many of the portraits executed from that period until the ninth century.

Lord Lindsay mentions, in reference to the peculiar Byzantine character of the head of the Redeemer, "that its earliest appearance is in a Mosaic, said to be of the fourth century, found originally in the cemetery of San Callisto at Rome, and now preserved in the Museum Christianum of the Vatican. It was repeated," he remarks, "in 441, attended to the right and left by the symbols of the evangelists, and the elders offering their crowns, on the triumphal arch of San Paolo fuori le Mura (now destroyed); was reiterated two years later on that of St. Maria Maggiore, still existing; and repeated constantly afterwards in the same situation—a half length, that is to say, within a wreath, and generally in the act of blessing with the right hand, and holding the cross or the globe in the left—in the basilicas successively built at Rome and elsewhere in Italy."

This peculiar arrangement of subject became popular throughout Europe, and was known in Italy as a *Majesta*, in France as a *Majesté*, and in England as a *Majesty*. Mr. Eastlake, in his invaluable "Materials for a History of Oil Painting," (p. 553), quotes a liberate roll of 1238, in which directions are given, "*majestatem quandam in capella Sancti Thomæ depingi.*"

In addition to these most interesting portrait subjects, Mr. Hope alludes to many others. "Sometimes," says he, "our Saviour is represented by a lamb exalted on a pedestal, and surrounded by a nimbus, to whom twelve other sheep, representing the Apostles, pay homage; at other times, stags approaching a vessel stand for the souls of the faithful thirsting after the living waters: these souls while here below, appear in the shape of doves; after the resurrection, and in a glorified state, in that of the phoenix. In the chapel of Santa Prassede, at Rome, four angels in the pendentives support a medallion, the centre of the cupola containing the head of our Saviour." Mr. Gally Knight, in his "Eccle-

sianstical Architecture of Italy," gives an excellent coloured representation of this Mosaic. Continuing to adopt the felicitous diction of Mr. Hope, we learn "that often a troop of martyrs, male and female, distributed to the right and left, are seen worshipping the more colossal central figure—if of our Saviour, or of the patron saint, standing on the clouds; or if of the Virgin, sitting on a gemmed throne. The triumphal arch is in general adorned, in conformity with its name, by saints or angels, celebrating the triumph of the cross, and the sacred initials suspended over its centre."

The limits of the present Sketch preclude us from entering into the shades of Byzantine symbolism, from pursuing the myths of tradition, or following the inflections of convention, and the approximations to naturalism, which the foregoing remarks indicate. Those studies require constant reference to illustrations, both pictorial and literary; and we must content ourselves with drawing the student's attention to the works of Ciampini, D'Agincourt, Lord Lindsay, Muratori, the Chevalier Bünsen, Quast, Kügler, Hope, Rio, and the Duca di Serradifalco, in which will be found ample food for thought and research on these interesting subjects.

The general aspect of the history of this art presents us with a picture of the industry, perseverance, skill, and, at the same time, monotony of the Greek character. From the fourth to the middle of the ninth century, an almost uninterrupted succession of works, of extreme value and importance, may be traced. For approximations to a chronological list of these, we are indebted to various authors; since, however, the account furnished by Lord Lindsay is the most condensed, and moreover excludes performances of comparative insignificance, we prefer rather to draw from his materials than from those of any of the other writers. He tells us that the more interesting Italian Mosaics, up to this period, may be enumerated as follows, in their chronological order:—"Those of Santa Sabina, Rome, c. 425 (now almost entirely destroyed); of Santa Maria Maggiore, c. 432; of S.S. Nazareo and Celso, or the tomb of Galla Placidia, Ravenna, 440; of S. Giovanni in Fonte, Ravenna, 451; of S. S. Cosmo and Damian, Rome, 530; of San Vitale, Ravenna, 547; of S. Maria in Cosmedin, Ravenna, 553; of S. Apollinare di fuori, Ravenna, 567; of San Apollinare di Dentro, Ravenna, 570; of San Lorenzo fuori le Mura, Rome, 578; of S. Agnes, Rome, 625; of the Oratory of San Venanzio, adjoining the Baptistery of Constantine, Rome, 642; of the Triclinium of San Leone, (interesting for the portrait of Charlemagne,) Rome, 797; of S.S. Nereus and Achilles, Rome, c. 800; of S. Maria in Domenica, Rome, 815; of S. Pudenziana, Rome, and of S. Prassede, Rome, c. 820; of S. Cecilia, Rome, 820; of S. Ambrogio, Milan, 836; of S. Maria Nuova, Rome, 848." In Mr. Hope's catalogue several examples, not here mentioned, may be found, accompanied, for the most part, by the names of the founders; and in the pages of Ciampini and Muratori, the student may find ample information as to dates and other minutiae.

From the year 850, to the beginning of the twelfth century—a period of war, misrule, and suffering—an almost complete hiatus in the history of Mosaic occurs in Italy; and as what little evidence we can gather of the extension of the art into other countries of Europe belongs to a nearly corresponding period, we shall thither, for the present, turn our attention.

To existing monuments, illustrative of this branch of the subject, we fear it is not in our power to refer. The Mosaics known to have been executed in the Abbey of Clugny are now defaced; and those which once decorated the cathedral at Aix-la-Chapelle were destroyed in consequence of the rebuilding of Charlemagne's Church, originally constructed in 796. The very early period at which history informs us that the French became thoroughly acquainted with every process connected with the manufacture of coloured glass, proves the capability of that people to produce, at a remote date, any variety of necessary material, whilst their most ancient *vitreous* manifest a considerable recognition of the principles of Mosaic arrangement. M. de Lasteyrie, in his admirable essay on Glass Painting, tells us, on the authority of Gregory of Tours, that before the middle of the sixth century stained glass existed in the Church of St. Martin, and that the ancient Abbaye de Junieges was decorated with coloured windows as far back as the year 650. We can therefore have no doubt, that in the ninth century the art of working in Mosaic was perfectly within the reach of the inhabitants of Europe north of the Alps. Fiorillo, in his "*Geschichte der Zeichnenden Kunst* in

Deutschland." states that in the year 993, Bernward, Bishop of Hildesheim, executed many works in Mosaic. He says that, "An einigen wästen stellen in seinem Bisthum hat er neue Gebäude, und zwar einige sehr schöne von weissen und rothen steinen und mit *musiv-gemälden* aufgeführt." Tangmar, the Monkish chronicler of the period, observes that this same ecclesiastic, "Musivum præterea in pavementis orandis studium nec non lateras ad tegulam propriâ industriâ, nullo monstrante composuit."

The tribute thus offered to the genius, but due only to the industry of Bernward, must be regarded as a mere rhetorical flourish, since, from many curious existing manuscripts, containing collections of "secreta," and recipes of all sorts referring to the arts, there can be no doubt that the knowledge of all such processes was then widely disseminated throughout Europe. The earliest record of this sort is that which has been printed by Muratori, in the "Antiquitates Italicae medii Aevi," vol. ii., fol. ed. The original MS. is preserved at Lucca, and was ascribed by Mabillon to the time of Charlemagne; its learned editor attributes the production, however, to the tenth century. The barbarous Latinity displayed, and the dilapidated condition of the original, render it, as Muratori confesses, almost illegible. He has, nevertheless, extracted from it the following recipes:—"De fictio omnium musivorum.—Prasimiviri de mundo de Massa libras V. limatura ceramenti absque plumbum.—II. Et mitte in vaso nobis tecte, sufficiens ignem, et decoquens inferiora fornace Vitriari, die VI. Et post hæc eice, et confrangis minutatim, et iterum conflas; Prasino tingues." "De inoratione Musiborum.—De inoratione Musiborum facis pecula plus crosa quejussans. Post hæc pone pectalum auream super pectalum Vitri. Et supra ponis pectala, super alia multum supra pectalum auri. Et mittis utraque in fornace, donec inchoat solvi petalum vitri et postea ejcis, ut refridet. Et tolle; frigas faciem in tabulam plumbinam ismironianam, donec attenuet faciem; et coloras illud." "De mosibum de argento.*—Mosibum de argento, secundo quod superius exposuimus, ita omnia facies."

Notices of the art of Mosaic, and of its technical processes, closely resembling the above, may be found in the pages of Theophilus, whose invaluable "Schedula Diversarum Artium" is ascribed by Mr. Hendrie to the early half of the eleventh century, though by M. Guichard, the Abbé Texier, and M. Didron, assigned to a considerably later period. Independently of the internal evidence of the German origin of the document, the number of early copies, and different versions of this MS. found in various great libraries—in Italy, Vienna, Wolfenbüttel, Paris, London, Cambridge—indicate how generally diffused throughout Europe may have been the knowledge of the receipts contained in it during the twelfth and thirteenth centuries. Clear and detailed directions for making the gold Mosaic may also be found in the "Mappe Clavicula," a MS. of great interest, recently published in the *Archæologia*, by Sir Thomas Philips, and by him attributed to the age of Henry II., as the production, most probably, of a transcriber or author of this country.

The existence of these, and probably many similar documents, coupled with the fact of the great influence constantly exercised by the Byzantines on French art and architecture, manifested in the early Limoges enamels, and in the churches of Auvergne and the South of France, justify us, we think, in concluding that the art of *glass Mosaic* was far more generally practised north of the Alps than is usually supposed. Nor must we forget that the primitive churches, probably adorned with that material, were dedicated to the most popular saints, and therefore very likely to become destroyed to make way for more spacious cathedrals, similarly dedicated, but capable of affording larger accommodation, and of supplying such a series of chapels and oratories as would yield a shrine to every patron saint whose intercession might be especially coveted.

Returning to that favoured soil, where all that was most beautiful most rapidly expanded, we find that though symptoms of a renewed existence in the history of Mosaic burst forth in the commencement of the great works at St. Mark's, Venice, (in 1073), it was not until the beginning of the twelfth century that the art exhibited any further striking development. It is in the decoration of the apse of the celebrated Church of San Clemente, at Rome, that we

* This recipe possesses peculiar interest from the fact of its being the only record of the employment of silvered Mosaic. The author has not been able, in any Italian example, to discover a trace of the practical carrying out of any such directions.

find the progression most strongly manifested. This is, as Lord Lindsay remarks, "a most elaborate and beautiful performance, yielding to none in minuteness of execution and in delicacy of sentiment. It is characterized, moreover, by a resuscitation of the symbolism of early Christianity so long neglected, although in subordination to one of the traditional dramatic compositions—the Crucifixion. On every account, therefore, it merits the most attentive examination." Space does not enable us to follow his lordship through his interesting description, either of these Mosaics, or those of St. Mark's, Torcello, Monreale, and others. In his eloquent pages, and in Ciampini's learned disquisitions, the student will probably meet with all the existing information that can be obtained respecting them, short of what a personal inspection might afford.

Towards the beginning of the thirteenth century, the Italian artists began to learn from the Greeks then settled at Venice, and probably at Rome and Monte Cassino, to execute Mosaic work for themselves. Fra Giacomino, otherwise called Mino da Turrina, commenced, in the year 1225, the decoration of the Tribune of the Baptistery at Florence; and, after there completing his work, he appears to have proceeded to Rome, where, towards the close of the century, we find him executing the splendid Mosaics of the Tribunes of San Giovanni Laterano and Santa Maria Maggiore. After the departure of Mino from Florence, his place was supplied by Andrea Taù, who acquired the art from the Greeks, then working at St. Mark's. He succeeded in inducing one of his instructors, Apollonius by name, to return with him to Florence: there they executed in conjunction the Mosaics which adorn the cupola of the Baptistery. In these labours they were assisted by the celebrated Gaddo Gaddi—the father of a race of artists—who, after distinguishing himself highly at Florence, was summoned to Rome; in which city he executed, among other large undertakings, the great Mosaic, still existing on the façade of the Basilica of Santa Maria Maggiore. For illustrations of this work, and to an Essay, as well thereon as on the great productions of Mino da Turrina, we refer the reader to the pages of D'Agincourt, Lord Lindsay, and "Knapp and Gutensohn's Basilicas of Rome." The chronological succession and differences of the practice of the art treated of in the first and in the last of those literary productions may be advantageously studied. With Gaddo Gaddi the genuine art of Italian *glass Mosaic* may be said to have died, although small portions, executed at almost every date, are yet to be found in that great encyclopedia of art, St. Mark's, at Venice.

Our second variety of Christian Mosaic—the *glass tessellation*, which we shall venture to call *Opus Greceanicum*—consisted in the insertion into grooves cut in white marble, to a depth of about half an inch, of small cubes of variously coloured and gilded "smalto," (as the Italians called, and still call, the material of which Mosaic is composed) and in the arrangement of these simple forms in such geometrical combination as to compose the most elaborate patterns. These, it is to be recollected, differ from all that were produced by means of "*Opus Musivum*," our first genus, in the essential particular of being purely conventional in style. These ornamental bands it was customary to combine with large slabs of the most precious materials—of Serpentine, Porphyry, Pavonazzetto, and other valuable marbles, and apply them to the decoration of the furniture of Churches and Basilicas. Thus they are constantly to be met with in the cancelli or screens, the ambones or pulpits, the episcopal and regal thrones, the ciboria or tabernacles, and in the most gorgeous tombs and monuments. Their use externally was comparatively rare, although they may occasionally be found uniting themselves with the architectural members of a building—as in the Cloisters of St. Paul's and St. John's in the Lateran; the Porticos of San Lorenzo fuori le Mura, Rome, and of the Duomo, at Civita Castellana. The *Opus Greceanicum* prevailed over the whole of Italy for many centuries, but cannot be referred to an extremely early origin, since the art of geometry, on which its beauty, and indeed existence, almost entirely depended, was not revived in any considerable degree until the sixth century, or later.

We are unable to instance any earlier example of glass tessellation than that in the Episcopal Chair and Tribune in the Basilica of San Lorenzo at Rome, executed, probably, about the year 580. The numerous plates illustrating the peculiarities of this variety of Mosaic furnished in the present work will, it is to be hoped, convey a clear idea of its nature, but they cannot fully express the felicitous manner in which its patterns harmonize in composition with

sculpture and painting. The regular and rectilinear qualities of its geometrical forms give to the figures of imitative art, and to curved and flowing ornament the same vivacity and sense of motion ("il mosso d'un quadro") which the rectangular lines of a piece of architecture afford when introduced into an historical picture.

The hexagon and the triangle, the square and octagon, form the usual geometrical bases of most of the specimens of this ingenious art to be found in Italy. Descending into Sicily, patterns of accumulating intricacy arrest our attention—more especially at Palermo in the Capella Palatina, and in the Cathedral at Monreale. The existence of these features in that particular locality is to be accounted for by the acknowledged skill of the Saracens, the principal inhabitants of the island, in the contrivance and execution of decorations of great elaboration and of striking colour.

Wherever *glass Mosaic* in imitation of figures was used, this kind of work was employed; and until the decadence of the former variety, neither in design, colour, nor nature of material, did the last examples executed of the latter appear to differ at all from the first. It is right, however, to notice that the popularity of the conventional Mosaic survived that of the pictorial by at least a century and a half.

These brilliant patterns will doubtless, to the taste of many, appear glaring and gaudy; but let those labouring under this impression picture to themselves its combination with the noble colour, and the scenic and picturesque association of the fine old Italian Churches, in which the examples are usually found, and they will probably arrive at some more just idea of its graceful and harmonious effect, and its capabilities as an industrial agent.

Scarcely any specimens of this art are to be found out of Italy. Mr. Hope notices some which formerly existed in the old Abbey of Clugny, in France, now destroyed; and we may boast of two or three specimens in our own country of exceeding interest. The Shrine of Edward the Confessor, which was finished under Henry III., bears an inscription, recording it to have been executed in the year 1270. The tomb of the same monarch exhibits also some very beautiful specimens of this same process, though, alas! in a wretched state of dilapidation. There appears to be no doubt whatever that these precious relics of long-forgotten arts were the work of Italian artists, and they have been long ascribed to the Italian, Pietro Cavallini, who executed the Mosaics of Santa Maria in Trastevere at Rome: but on most fallacious evidence are they attributed to him, since he never appears to have visited England; and had it been possible for him to do so, his visit could not have been at that time.

Turning now to our third division of the *medieval Mosaic*—that which formed the ordinary Italian church paving from the time of Constantine down to the thirteenth century—the *Opus Alexandrinum*. We may describe it generally as tessellated marble work—that is, an arrangement of small cubes, usually of porphyry or serpentine (reddish purple and green coloured), composing geometrical patterns in grooves cut in the white marble slabs which form the pavement. The contrast between these two colours produces a monotonous but always harmonious effect. Giallo Antico, a light yellow marble, with an occasional blush tone, is also sometimes employed, but it has always the appearance of a subsequent introduction. This kind of pavement is of very great antiquity, and is generally regarded as having closely resembled that introduced into Rome by Alexander Severus, A.D. 222—235. Lampridius asserts that the Emperor brought with him from Alexandria great quantities of porphyry and serpentine, which he caused to be worked into small squares and triangles, and variously combined. Prior, however, to this date, Pliny had described (l. xxxvi. cap. 25), "a species of Mosaic for pavements, composed of interlayings of porphyry and serpentine—richer in colour and less liable to wear out than softer marbles—which he calls *genus pavimenti Grecanici*."* Adopted by the Byzantine Greeks as their "specialité," it was, by the aid of their workmen, largely disseminated throughout Italy, and, (as we have already learned from the passage concerning Desiderius, furnished by Leo Ostiensis), the Italian monks acquired from them the processes of its manufacture.

It must be confessed, that but few of the specimens which remain exhibit any considerable neatness in the

* Hope's Essay on Architecture, p. 161.

"commettitura," or fitting together. The least imperfect in this respect are those in the Capella Palatina, at Palermo, and in the churches of San Lorenzo and Santi Giovanni e Paolo, at Rome. Strong internal evidence of the Greek (Byzantine) origin of the design of all these pavements is to be found in the marked limitation of the variety of ornament employed throughout Italy and Sicily;—the same patterns for the filling-in forms being found in almost every church paved with the "Opus Alexandrinum" throughout either country; and the general arrangement is, in principle, perfectly identical. The effect of the most common leading "motif" is tolerably clearly shown in our plates of portions of the pavement at St. Mark's, Rome, and at San Lorenzo, without the walls of the same city.

We have good reason to believe that this variety did not remain in general use nearly so late as either of the two varieties previously described, and that its employment was discontinued almost totally towards the end of the thirteenth century. It was gradually superseded by that kind of work known to the Italians as "*Opera di Commesso*,"—that is, a Mosaic formed by slices of marble, arranged somewhat on the principle of the ancient "*Opus Sectile*,"—the projections of one piece being so cut as to enter into the recesses of another: in that manner it produced, at first, geometrical and conventional forms and patterns, and, at a later period, pictorial representations. When this latter effect was aimed at, advantage was taken of the natural tints of the marbles to express shades and local colour; and the work, when fully carrying out the imitative system, became what is generally known by the name of "*Florentine Mosaic*." Limited at first to the monochrome and conventional expression of form, we may trace this art from the Church of San Miniato and the Baptistery of Florence, through the works of Giotto at the Campanile, Brunelleschi at the Duomo, and Orcagna at Or San Michele, to the singular pavement at Siena, where, through the wonderful skill of Beccafumi, large and elaborate historical compositions may be seen, admirably exhibited in light, half tint, and shadow, by means of the contrast of three marbles only.

This sketch of the nature of the Mediæval Mosaic processes would, even as an outline, be imperfect, did we omit all notice of that curious variety which, possessing some analogy with the early Florentine work, differs from it chiefly in the nature of the materials of its composition. We allude to *Volcanic Mosaic*—which, as may be readily inferred from its name, is to be found developed in those districts only where nature, in her superfecundity, has provided ingredients peculiarly fitted, from their depth and contrast of tint, to produce varied effects when, by incrustation, combined in the surfaces of stone or marble of a lighter or warmer colour. In the kingdom of Naples, in Sicily, and in Auvergne in France, numerous churches exist in which this method of inlaying has been adopted with a singularly graceful effect;—many of the ornamental designs so executed possessing much freshness and vivacity. The Duomo and Great Cloister at Monreale, the Cathedral and the tower of the Church of La Martorana, at Palermo in Sicily, and the churches at Analfi and Ravello, in the kingdom of Naples, present us with the best specimens of this Mosaic, so well adapted for external decoration; while the interesting examples illustrated by M. Mallay, in his "*Eglises Romanes et Romano-Byzantines du departement du Puy-de-Dome*"—those especially which ornament the Church of St. Paul d'Isoire—demonstrate how curiously identical was the method of working the "tufo" in France and in Italy during the eleventh and twelfth centuries.

Turning our attention awhile from the regular varieties of European workmanship, it may be well to notice that, during the middle ages, Mosaic obtained to a very considerable extent among the Eastern nations:—in India, at Agra and Delhi, in the form of inlaying with precious stones, marbles, and coloured compositions; in Turkey and Asia Minor, in the form of large pieces of *faience*, coloured on the surface and fitted together. In Spain, the Moors adopted it as an essential element in the formation of *dados* and mural decoration. The Spanish affection for "*azulejos*," or painted tiles, has indeed grown into a proverb. One instance only occurs in the *Alhambra* of the employment of Mosaic as pavement. The tiles composing the Alhambraic wall decoration are usually square, and stamped on the surface with very intricate patterns; the colouring matter, being then floated over, sinks into the indentations, and on being wiped away from the plain faces, remains only in those sinkings which define the ornament. The sides are so cut away at an

acute angle to the face, as, when laid together, to leave a key for the plaster, and yet come to a perfectly neat joint externally. Interesting examples of the Moorish and Oriental tiles and Mosaic are given in the works of Herr Hessemer and Mr. Owen Jones; and many beautiful specimens in imitation have been produced by our own manufacturers.

Having thus endeavoured to convey some idea of the nature and peculiarities of mediæval Mosaic, it remains for us, in connexion with our second historic division, to glance at the accelerating causes which, immediately preceding the age of Leo X., aided in banishing these graceful adjuncts to architectural decoration from the catalogue of the products of Italian art.—Our first variety, *Glass Mosaic*, with its Byzantine conventionality, and its unvarying gold ground, was superseded throughout Italy by Fresco painting, or by an incrustation of the walls of churches, chapels, and other buildings, with large slabs of highly polished marbles. At Venice only was it retained in anything approaching its pristine perfection, after the year 1500.—The second process, the *Glass tessellated work*, was too picturesque an element to harmonize with the severity of Vitruvian precepts, and was, therefore, entirely neglected by those architects who modelled their practice in perfect subservience to his magisterial dicta.—Our third variety, the *Marble tessellation*, shared a similar fate—attributable, probably, to the same cause, aided by the fact that the porphyry and serpentine, of one or other of which it was invariably composed, were both extremely costly to procure, and still more expensive to work. The mode of properly cutting and carving those materials was, indeed, for many centuries, placed by the Italians among the lost arts.

Mosaic, however, was too congenial to Italian taste and association to remain long in obscurity. On the revival of learning and classical studies, attention was naturally directed to the restoration, to their former dignity, of some of the ancient manufacturing processes. At Rome, efforts were made to imitate the *Opus Figulinum*; at Florence, the *Opus Sectile*: both were crowned with success. The one is now known to us as *modern Roman*, the other as *modern Florentine Mosaic*. The decoration of the domes of St. Peter's, undertaken by Clement VIII. at the commencement of the seventeenth century, created a great demand for artificers in Mosaic at Rome, and induced the establishment of a regular school and manufactory—now called the "*Fabrica*." At the commencement of these works, as large a sum as four scudi per square palm was paid for the labour of forming coarse Mosaic; but in consequence, Ciampini tells us, of the influx of artists from all parts of Italy, attracted to Rome "*famâ tam immodici pretii, et copie Musivi operis, quod inibi construi casperat*," the price for the same quantity of similar work soon diminished to about half a scudo—two shillings and sixpence of our money. The study of the art in the great Papal manufactory at Rome was doubtless much stimulated by the discoveries there made, from time to time, of various ancient examples, and likewise by the genius and ability of the celebrated Giovanni Battista Callandra. This remarkable artist, who died in the year 1644, executed that well-known copy of Guido's picture of St. Michael the Archangel, which now adorns one of the chapels in St. Peter's; he also conferred the greatest benefit on the system of fixing the tesserae by the invention and adoption of a retarding mastic cement.

No important change appearing to have taken place in the mode of Mosaic manufacture from the time of Callandra to the present day, a short notice of the process now usually followed at Rome may not be uninteresting:—A plate, generally of metal, of the size of the picture to be copied, is first surrounded by a margin rising about three quarters of an inch from its surface; this is then covered over with a coating, of perhaps a quarter of an inch in thickness, of mastic cement, composed of powdered Travertine stone, lime, and linseed oil. This, when set, is entirely covered with plaster of Paris, rising to a level with the surrounding margin, which is intended to be exactly that of the finished Mosaic; on this is traced a very careful outline of the picture to be copied; and with a fine chisel just so much is removed from time to time as will admit of the insertion of the small pieces of *smalto*. This "*smalto*," composed, as already mentioned, of glass, is prepared in circular forms, about six or eight inches in diameter, and half an inch thick. For full directions for making and colouring this substance the reader is referred to the works of Neri and of Ciampini. The operator then proceeds to select from the great depository, wherein are preserved in trays nearly ten thousand varieties

of colour, a piece of the particular tint he may require; this he brings to the necessary shape by striking the smalto with a sharp-edged hammer, directly over a similar edge placed vertically beneath; the concussion breaks the smalto to very nearly the form desired; and the precise shape and size are afterwards obtained by grinding it upon a lead wheel covered with emery powder. The piece thus shaped is then moistened with a little cement, and bedded in its proper situation, —the process being repeated until the picture is finished; when the whole, being ground down to an even face, and polished, becomes an imperishable work of art, rescuing from oblivion beautiful forms too often subject to mutability and destruction. Thus have been elaborated those noble specimens of Mosaic that decorate the altars of St. Peter's —those wonderfully minute records of the past or passing beauties of Raphael's Transfiguration, of Domenichino's St. Jerome, and of Guercino's Santa Petronilla, which happily, as an enthusiastic German traveller* remarks, "wie an Tage ihrer vollendung, so strahlen sie noch jetzt in schimmernden Farbenfrische, und werden es, so lang nur ein Steinen neben dem andern sitzt." Six regularly instructed artists are now usually employed in the "Fabrica" at the Vatican. The process adopted in manufacturing those minute Mosaics which are so largely employed at the present day in articles of *bijouterie* and *verté*, is exactly similar in detail to that we have already described, though elaborated, of course, upon an almost microscopic scale.

The *Florentine*, our second variety of *modern* Mosaic, is generally composed of an assemblage of precious materials in very thin slices or veneers; and by taking advantage judiciously of the natural tints and shades which characterize the marble, agate, or jasper, of which it may be formed, very extraordinary effects may be produced in tolerably perfect pictorial imitation of fruit, flowers, figures, or ornaments. This work, in consequence of the manner in which its component parts are fitted together, is called by the Italians, "Opera di Commesso," and as such Giorgio Vasari describes at some length its peculiar nature and capabilities. Baldinucci furnishes us with a tolerably copious list of those artists through whose exertions the celebrity of the grand Ducal manufactory was maintained during the seventeenth century, and to whose taste and ingenuity Florence is indebted for the choicest specimens which at present decorate her palaces and galleries. In consequence of the extremely expensive character of this Mosaic, its use has been, and is very much restricted: still—considering that none but the hardest minerals are employed; that every piece of veneer must, in order to obtain additional strength, be backed by thicker slices of slate or some such material; that every minute portion must be ground until it exactly corresponds with a pattern previously cut—we cannot but express surprise at the great quantity and the grand character of the works which have been, and are still produced at the celebrated Grand Ducal "Fabrica." Portions, lately completed, of an altar front intended for the chapel of the Medici at San Lorenzo, far surpass in delicacy and beauty any specimens yet executed at Florence; and they demonstrate that Mosaic, at least, has not shared in the general decrepitude which has enfeebled the modern practice of the fine and industrial arts in Tuscany.

We have now, through our divisions into the *Ancient*, *Medieval*, and *Modern* periods, attempted to trace the progress of the art of Mosaic from its past to its present state: that portion of its present existence which is most interesting to us, nationally, nevertheless remains to be examined. In no country of Europe (Italy, of course, excepted) has any attempt to revive the lost processes been crowned with much success; and although in England, for many years past, a series of intelligent manufacturers have brought considerable skill and energy to bear upon the subject, their efforts can scarcely be said to have arrested public attention; still less have they created the demand which their sanguine enthusiasm and commercial activity in some measure deserved. Mr. Ward, in his able paper published in Mr. Blashfield's valuable work on Mosaic floors, says,—“about forty years ago a patent was obtained by Mr. Charles Wyatt for a mode of imitating tessellated pavements by inlaying stone with coloured cements; floors thus constructed, however, were found liable to become uneven in use, in consequence of the unequal hardness of the materials, which defect prevented their general adoption. Terra cotta (or burnt clay), inlaid with coloured cements, has also been tried, but

* Herr Spehl, "Die Kunst in Italien." 2ter Theil p. 189.

found liable to the same objection." During the last ten years many experiments have been tried, both with cements (coloured with metallic oxides) and various bituminous compositions, all with but indifferent success. The lessons of experience, acquired during a long course of practical study and observation, enabled Mr. Blashfield, in the year 1839, to construct an elaborate Mosaic flooring for Mr. Hope at his seat at Deepdene, in Surrey. This pavement—combining the principles of the ancient "*Opus Incertum*," the Venetian *Pisé*, and the common Italian *Trazzo* floors—has elicited much admiration from those judges by whom it has been examined. By this, and many similar efforts, more general attention was attracted to the subject, and the way became opened to those improvements we shall proceed to describe. Setting aside the employment of encaustic tiles, as scarcely coming within our strict definition of *Mosaic*, we look upon these great improvements as two only in number—one system of construction emanating from the ingenuity of Mr. Singer and Mr. Pether; the other arising from the combined energies of Mr. Prosser, Mr. Blashfield, and Mr. Minton, of Stoke-upon-Trent.

Mr. Singer's first object was to secure a perfect imitation of the ancient Roman "*Opus Tessellatum*." In order to obtain *tesserae* perfectly uniform in size, hardness, colour, and surface, he placed compact and well *pugged* clay in a machine, where, by means of powerful levers, it was subjected to great pressure, and made to exude at last out of a horizontal aperture of six inches by half an inch. As it protruded it was cut into lengths of three inches; and these small pieces of clay, six inches in length by three in breadth, and half an inch in depth, were left for some days to dry. Fifteen or twenty were then laid upon one another, and a frame of corresponding size (across which were strained wires crossing one another at regular intervals), sliding vertically on two uprights, was made to pass through them—cutting out by this motion, perhaps, one hundred uniform tesserae. When any curved forms were required, the tesserae were placed angle-wise in a groove, and a piece of curved metal made to pass through a quantity placed together,—thus producing a perfect coincidence of form between the parts so divided. The tesserae being then burnt, and partially vitrified, became an excellent material, by the employment of which very beautiful pavements have been elaborated. Among these may be noticed the flooring of the Hall of the Reform Club, and a portion of the pavement of Wilton Church, near Salisbury.

The second mechanical improvement to which we have alluded was originally discovered by Mr. Prosser, of Birmingham, in the year 1840. "He found (to quote the words of Mr. Ward) that if the material of porcelain (a mixture of flint and fine clay) be reduced to a dry powder, and in that state subjected to strong pressure between steel dies, the powder is compressed into about a fourth of its former bulk, and is converted into a compact substance of extraordinary hardness and density, much less porous and much harder than the common porcelain uncompressed and baked in the furnace. The happy idea having suggested itself to Mr. Blashfield that this process was better suited for the formation of tesserae than any other, he made arrangements with Messrs. Minton and Co. (who had been employed by Mr. Prosser to carry out his invention) for a supply of small cubes thus formed. Many very beautiful Mosaic pavements have been produced with the aid of these admirable tesserae. They may be made of any form—either in squares, for tessellation, triangles and hexagons, for imitation of the *Opus Alexandrinum*—or of any colour; and by means of enamelling the surface with the most brilliant tints and gold, perfect substitutes for the *medieval glass tessellation* may be produced. In order to form a Mosaic with these tesserae, the pattern is first arranged upon a true bench, that is, a perfectly level and rectangular table; the cubes are placed each one in its proper situation, and are then covered over with a peculiar cement, on which are bedded strong tiles or slate backing. Directly the mass is indurated, the pavement may be raised and removed to its intended situation, and will be found to be perfectly true on the face, of an even hardness, imperishable and unchanging, with an almost imperceptible joint, and altogether as beautiful in mechanical execution as such a work can be. We have dwelt thus minutely on these details, since we feel most anxious to disabuse the public mind of the popular notion that there exist great practical difficulties in, and impediments to, any attempt to establish this elegant ornament as a general work of British Art.

Having thus briefly recapitulated the leading events, and described the structural peculiarities which have obtained at different epochs in the history of Mosaic, we shall proceed to offer a few remarks on the advantages likely to accrue to students in *æsthetics*, who may be enabled to correct the imperfections and supply the deficiencies which disfigure our feeble sketch of a truly great original.

To all who take a sincere interest in the art of painting, the importance of a thorough acquaintance with the history of Mosaic is extreme; since almost the only records, on a large scale, of the earliest progress and development of the power of representing form pictorially, in accordance with ecclesiastical tradition, are traced in its marked and apparently ineffaceable characters. To those engaged in the examination of ancient manuscripts it is of great value, in enabling them to approximate to dates, and to test and compare styles,—to a knowledge of which they could attain through scarcely any other means. To all interested in the history of *stained glass*, an acquaintance with the peculiarities of *Christian Mosaic* is highly important;—the most interesting relations being found to subsist between the primitive expositions of both dramatic and purely conventional form, as set forth through the aid of both materials. To the enameller, the study must be possessed of great charms, since the Greeks, who were for many centuries the chief, if not the only, European labourers in that branch of the arts, merely reproduced, upon a strictly Mosaic system of operation, and in a very minute form, in their enamels, those works which, on a large scale, decorated the walls of their noblest buildings. To the architect, Mosaic affords the most durable, and, probably, the most beautiful means of adding to the charms of well-studied and varied form the graces of colour; it enables him to study the science of polychromy on the largest scale, and by the aid, too, of a series of the most fully developed experiments; it offers to him, in its simple geometrical character, a variety of design, almost unparalleled in decorative resources—one that harmonizes alike with the severer forms of monumental style, and the more free and graceful peculiarities of domestic and social requirement.

When forming an almost imperishable lining to one of the principal chambers of the British senate house, or inserted in a marble chimney-piece beneath a roof of even humble pretensions—if its history, conditions, and processes be but rightly studied by the designer—Mosaic will be found to constitute a beautiful embellishment and a graceful and harmonious addition.

In concluding his notices of this interesting subject, the author feels that, scanty and imperfect as they may appear, they would have been still less worthy of attention but for the kindness of some personal friends, whose sympathy, advice, and assistance, have supported his energies, corrected his judgment, and lightened his labours.



DESCRIPTION OF THE PLATES.

THE FRONTISPIECE, No. 1.—The various patterns which compose the ornamental border surrounding the title have been selected from churches at Rome and in its immediate vicinity. The exterior, exhibiting the union of porphyry with *glass tessellation*, is copied from a portion of the pulpit on the Epistle side of the Basilica of "San Lorenzo fuori le Mura;" and the borders running along the top and bottom of the space within are taken from a very curious tomb now existing in the Church of Santa Maria in Araceli, Rome—commemorating some member of the Savelli family.

PLATE No. 2.—Fig. 1 exhibits a fragment of the pavement which once adorned the Church of San Marco at Rome. It is a fine specimen of the *Opus Alexandrinum*, or marble tessellated work, and is composed solely of the three materials—porphyry, serpentine, and white or slightly clouded marble—in grooves cut in slabs of the last of which the porphyry and serpentine are embedded. Fig. 2 is a representation, full size, of one of the most frequently recurring patterns in this variety of Mosaic, and has been introduced into this plate in order to furnish a just idea of the actual scale of Fig. 1. It was copied from the pavement of the Church of Santa Maria Maggiore, Rome.

PLATE No. 3.—Fig. 1 shows, to a half-full size scale, the effect of a small piece of very finely executed *Opus Alexandrinum*, which is now inserted in front of the high altar of "Santa Maria in Trastevere," Rome—a church which boasts of having been the first dedicated to the "Blessed Virgin" in that city. Figs. 2 and 3 furnish us with specimens of the common varieties of pattern used to fill in the grooves cut in the marble floors of the churches, &c.

It is unnecessary, we hope, to remark, that in all our illustrations of this kind of Mosaic, the dark green colour indicates *serpentine*, the purple *porphyry*, and the ground tints, the white or clouded *marble*, into which the two former materials are inserted.

PLATE No. 4.—Fig. 1 exhibits a small compartment of the floor of the Church of San Bartolommeo, on the Island of the Tiber, an interesting structure, rebuilt in 1113, under the Popedom of Paschal II. Figs. 2, 3, 4, have been selected from the magnificent pavement of San Giovanni in Laterano, Rome.

PLATE No. 5.—Fig. 1 displays a small portion of the *Opus Alexandrinum* to be found in the Church of S.S. Giovanni e Paolo, Rome. It has evidently been removed from its original position, and relaid in that which it at present occupies, being entirely surrounded with modern tile work. Fig. 2 is a very simple common pattern from the Church

of La Martorana, at Palermo. Figs. 3, 4, have been drawn from the flooring of Santa Maria in Cosmedino, Rome—a building possessing strong claims to our notice in connexion with the history of Mosaic, since it was erected by Adrian I. in 782, expressly as a shelter for the Greek ecclesiastics expatriated in the Iconoclastic persecutions under Constantine Copronymus. In connexion with the church was a school, (the “Scuola Greca,”) and doubtless from that centre issued most of the workmen whose labours adorned the principal religious edifices erected at Rome during the eighth and ninth centuries.

PLATE No. 6.—Fig. 1 shows, to an inch and a quarter scale, one of the compartments, occupying an intercolumnar space, in the nave of the Basilica of Santa Maria Maggiore. This pavement, in intricacy of pattern and general variety of design, surpasses any other in Rome, but so much has it been remodelled and repaired, that it is now scarcely possible to distinguish the original from the more modern work. We feel inclined to believe that the centre of the fragment engraved is a decided interpolation. Fig. 2 is a filling-in pattern from the same floor, and has been represented in its actual size, in order to afford a clear idea of the dimension of its companion example.

PLATE No. 7 is a feeble attempt to convey some notion of the beauty and elaboration of one of the finest specimens of the Opus Alexandrinum existing—the pavement of the *present* nave of the Basilica of San Lorenzo fuori le Mura, Rome. Its date is probably the end of the eighth century, when Pope Adrian I., the great patron of Mosaic work, remodelled the ancient Church of Pelagius II. It yet remains in very excellent preservation.

PLATE No. 8.—Fig. 1 brings us to our first example of *glass tessellation*. It forms a portion of the Epistle Ambo in the same Basilica from which our last illustration was drawn, and takes its date, there is little doubt, from the same period. Fig. 2 is a diaper pattern, from a panel in the frieze over the arcade in the Cloister of San Giovanni Laterano.

PLATE No. 9, continuing the series of specimens of *glass tessellation*, gives us, in Figs. 1, 2, 3, a curious illustration of the mode in which the mediæval Mosaic workers occasionally blended with their “*lavori di smalto*,” or *ficilia*, cubes of the more precious stones, such as porphyry and serpentine. Fig. 1 is from the Cathedral at Monreale, near Palermo; Figs. 2 and 3 are from different articles of ancient church furniture in the Basilica of San Lorenzo fuori le Mura; Fig. 3 is from the Duomo at Palermo; and Fig. 4 is a pattern filling-in a spiral groove in one of the lovely twisted columns which decorate the fairy-like cloisters of San Giovanni Laterano. Fig. 5 possesses a peculiar interest to Englishmen, in being almost precisely similar to some of the circular ornaments, fragments of which still remain, incrustated on the tomb of Henry III. in Westminster Abbey.

PLATE No. 10 furnishes, in Figs. 1 and 5, charming specimens of simple designs from Monreale in Sicily; and, in Figs. 2, 3, 4, presents us with some less playful products of Roman ingenuity taken from the Basilica of San Lorenzo.

PLATE No. 11 contains, in Figs. 1, 2, 4, three more examples of *glass tessellation* from the same Church; and, in Fig. 3, a modern restoration of an old pattern from the Duomo at Monreale, attached to which is a regular establishment for repairing and replacing the dilapidated Mosaic work of the walls, floor, and articles of church furniture.

PLATE No. 12.—Fig. 1 is another piece of bordering from the same “*Fabrica*.” Figs. 2, 3, 5, 6, are from San Lorenzo, and Fig. 4 is from the Cloisters of San Giovanni Laterano. Figs. 7 and 9 are from the Cathedral at Palermo. Fig. 8 is from the door-jamb of the Cathedral at Civita Castellana. Fig. 10 is a small ornament running round the arch

of the Apse of the Church of San Marco, Rome, and as well as its more ancient companion, Fig. 11.—which is a fragment from the Baptistery or Mausoleum of Santa Costanza—exhibits a decided taste for classical forms.

PLATE No. 13.—Fig. 1 is taken from a tomb in the Cathedral at Naples, and exhibits the Oriental principle so fully and admirably carried out in Fig. 4—which is a specimen taken from the remains of the Saracenic Palace, "La Ziza," at Palermo—of allowing a white line to develop the geometrical base of the pattern, and at the same time of weaving the other colours round and about, as a beautiful accompaniment, harmonizing with, but not overpowering the original and predominant idea. Fig. 2 is taken from the Basilica of San Giovanni Laterano, Rome; and Fig. 3 is from San Lorenzo, without the walls of the same city.

PLATE No. 14 presents us with the most elaborate example of this principle of design that the Author has been enabled to procure. It was taken from the King's Seat in the Duomo at Monreale in Sicily.

In PLATE No. 15, as well as in the following, No. 16, an attempt has been made to convey some idea of the exquisite effect produced by *glass tessellation* in conjunction with the architectural and formal peculiarities of the objects it is usually employed to adorn. In Plate 15 the two beautiful columns on the right and left have been selected from those whose elegant proportions grace the Cloisters of San Giovanni Laterano: they date probably from the days of the Cosmati—the beginning of the thirteenth century. The two fragments occupying the centre of the plate have been taken from San Lorenzo fuori le Mura, Rome, and may be attributed with confidence to a considerably earlier period—to the days of Pope Adrian I., the end of the eighth century.

PLATE No. 16 is a careful representation of one of the marble Pulpits remaining in the interesting Church of Santa Maria in Araceli, Rome. Though not so elaborate as those of San Lorenzo, these ambones develop, in considerable dignity and much beauty, the primitive form of these essentials to Christian worship.

PLATE No. 17 commences our series of illustrations of the architectural and conventional forms of *glass Mosaic*, and will furnish, it is to be hoped, some notion of the excessive beauty of the original patterns elaborated by its means. With the exception of the two smallest subjects on the plate, which have been taken from the Church of SS. Nereo ed Achille at Rome, the whole of the sheet displays ornamental enrichments selected from the truly noble Cathedral at Monreale, near Palermo. The six larger examples at the top and bottom of the plate form the lining to the window-jambas, and the remaining three are incrustations on the wall of the Church.

PLATES Nos. 18 and 19 exhibit a variety of those exquisite *glass Mosaic* decorations which adorn the Church of St. Mark at Venice. The careful examiner will be enabled to trace through them some, at least, of the vicissitudes that have at various periods affected the peculiar systems of conventional representation in ordinary use. It is believed that an inspection of these Plates will show that Mosaic has been made one of the most beautiful as well as the most enduring means of recording the graceful fancies of the architect that human ingenuity has yet devised.

PLATE No. 20.—Figs. 1, 2, 3, 4, 5, 6, 7, 8, have been chosen from the lovely illuminations which confer so extraordinary a value on the Byzantine copy of the Acts of the Apostles preserved in the Library of the Vatican. They will serve to develop, by contrast with the preceding specimens of glass Mosaic, the general coherence of design existing between the ornaments on vellum and those incrustated on the walls of the stateliest churches, and demonstrate, to the fullest extent, the Greek affection for gold grounds and dazzling yet harmonious colouring. Fig. 9—the soffit of

one of the arches of the Martorana Church, Palermo—has been introduced to aid the comparison, and to intimate to designers of structural embellishment in the present day, that much might be gained by adopting a grace from that which at first sight appears but little congruous to their art. It may also suggest to designers upon paper the advantage they would derive from learning to render, according to the laws of their own vehicle of expression, some of those beauties which charm us in a larger material form of embodiment.

PLATE No. 21 furnishes a few more specimens of *glass tessellation* from the Cathedral at Salerno (Regno di Napoli), the most interesting building of its class in the south of Italy.



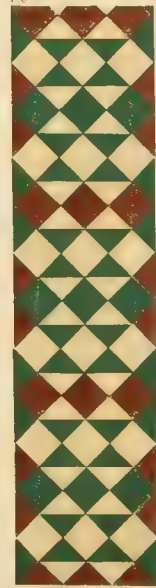
FIG. 1

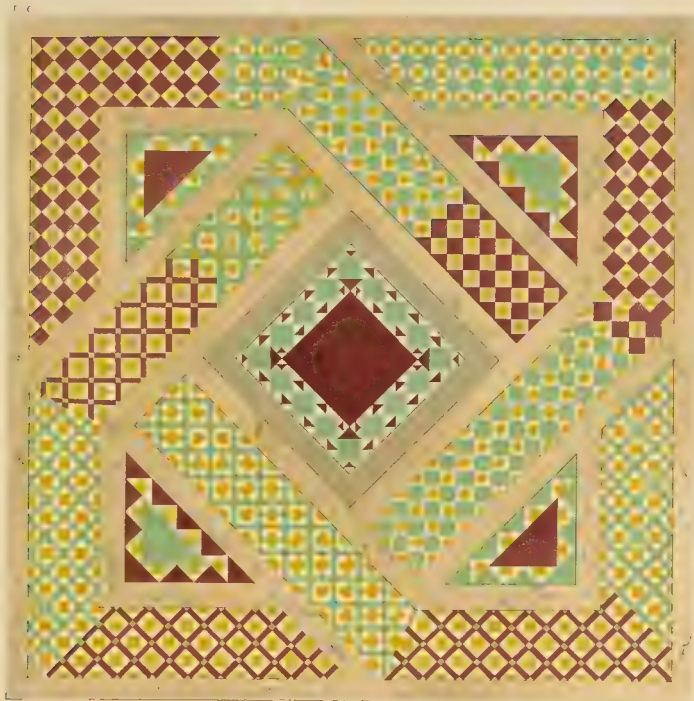


FIG. 2

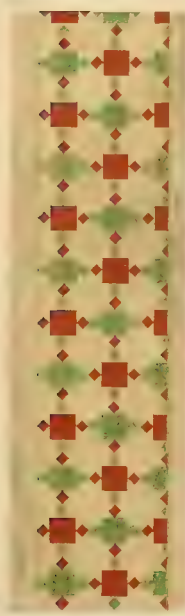


FIG. 3

ROME, SANT^A MARIA .. TRASTEVERE AAA ALL ONE THIRD FULL SIZE



ROME SAN BARTOLOMEO NELL' ISOLA DEL TEVERE

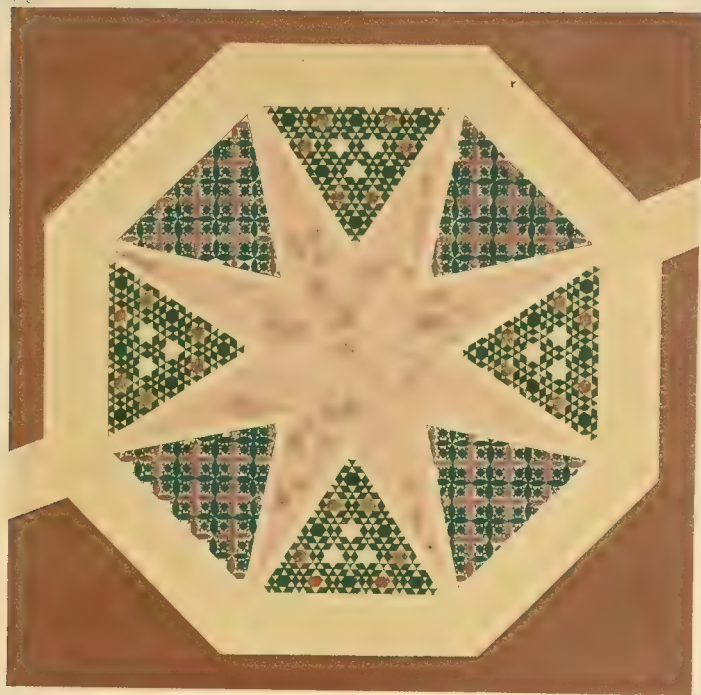


ROME SAN GIOVANNI

ROME SAN GIOVANNI ATERANO

ROME SAN GIOVANNI





ROME SAN GIOVANNI E PAULO

FIG 2

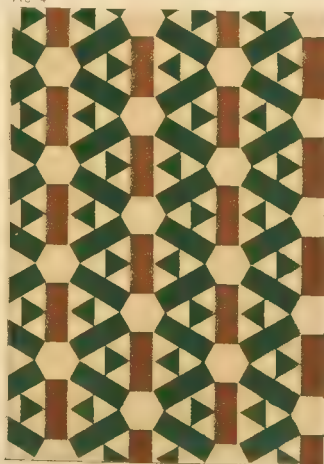


PALERMI FROM LA MARTORANA FULL SIZE

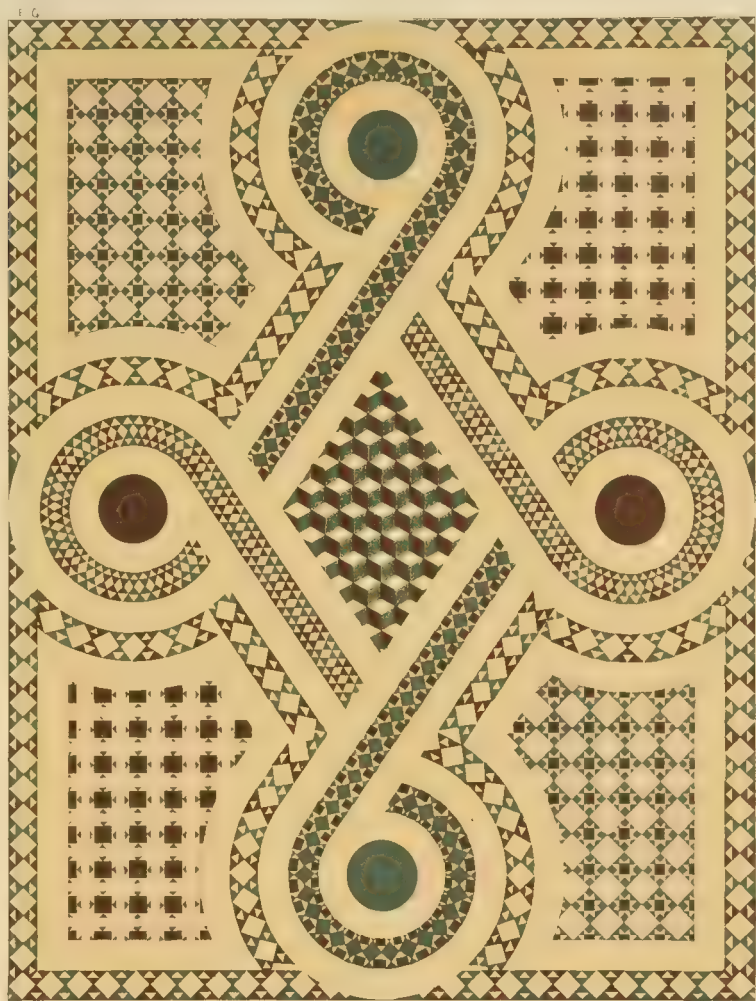
FIG 3



FIG 4



FIGS 3 & 4 FROM SANTA MARIA IN COSMEDINO ROME

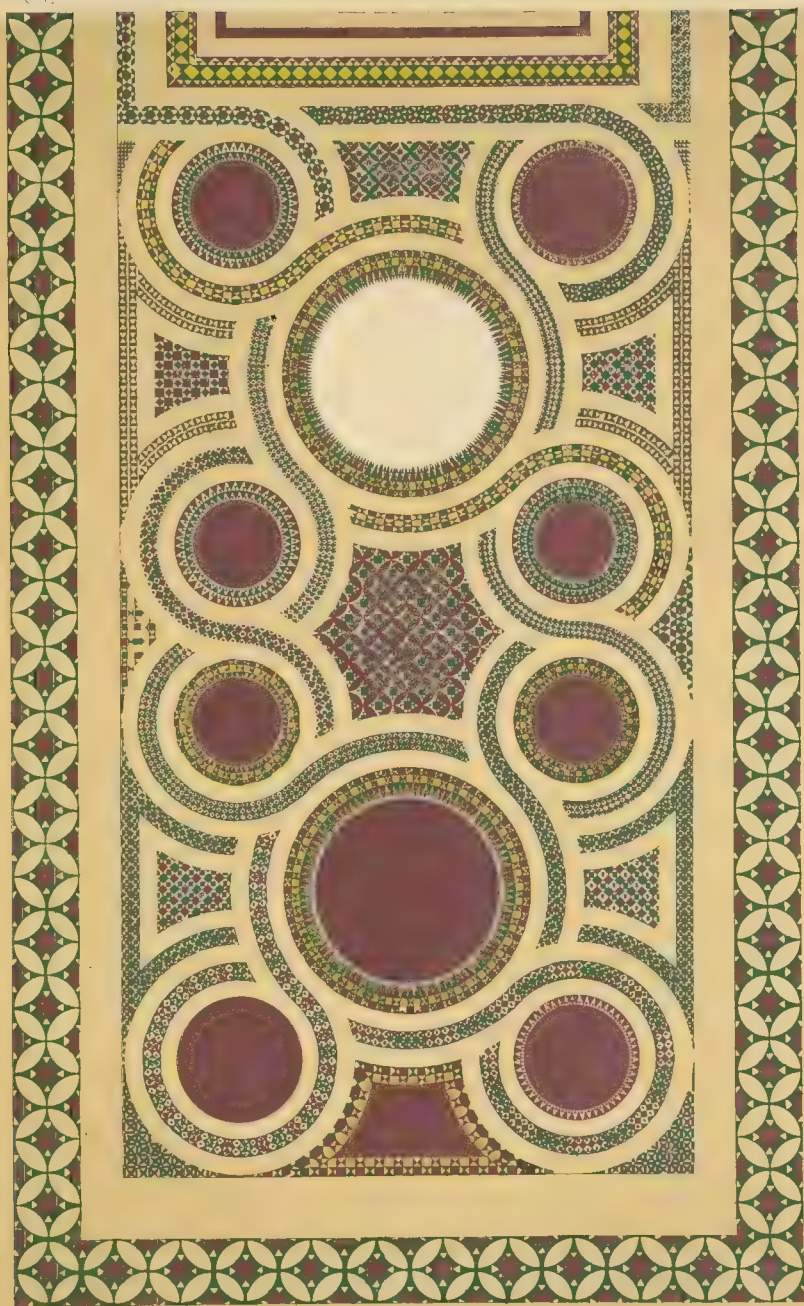


ROME SANTA MARIA MAGGIORE 1½ INCH TO A FOOT

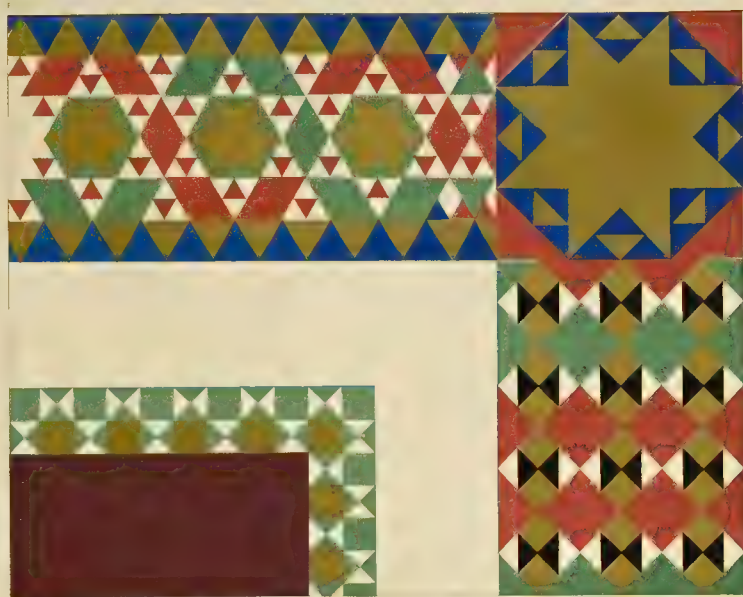


ROME, SANTA MARIA MAGGIORE - FULL SIZE

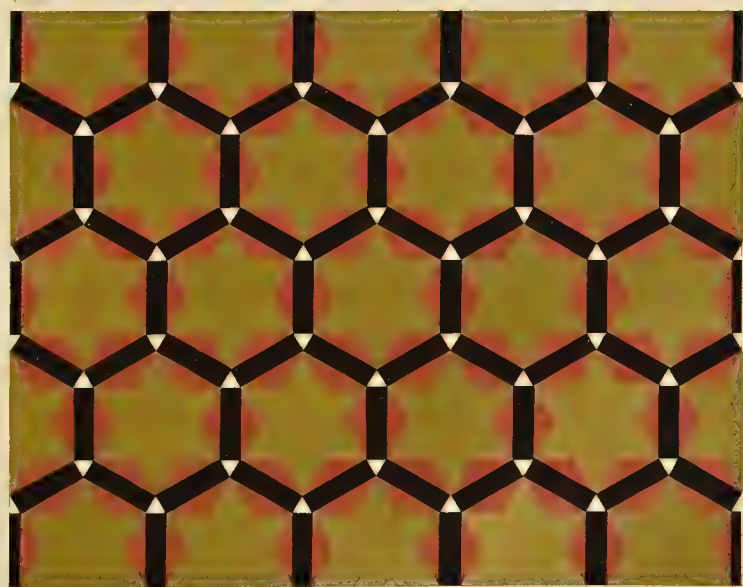








SOME AN OLDENLY QUILT PATTERNS

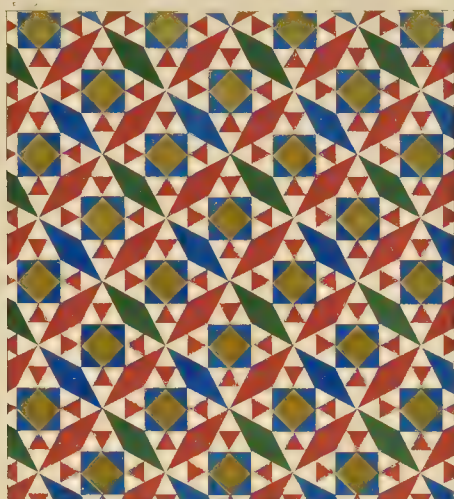


ONE SAN JUAN QUILT PATTERNS





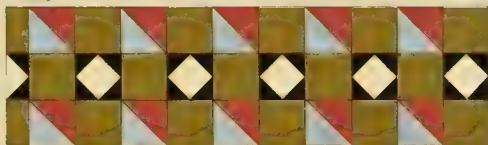
SYRACUSE CATHEDRAL



ARMENIAN PRINCE



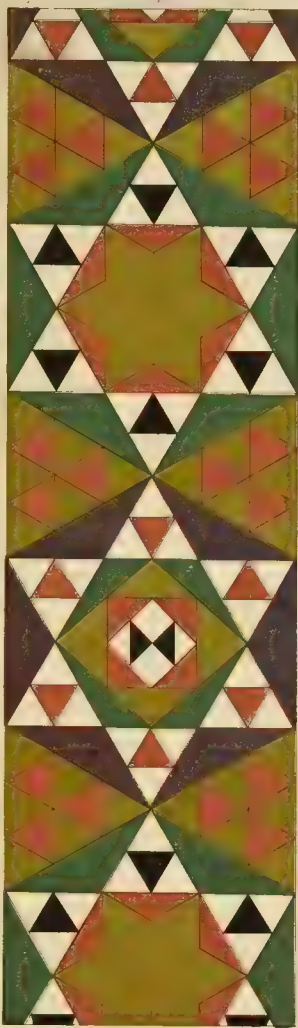
PARMESE CATHEDRAL



ARMENIAN PRINCE







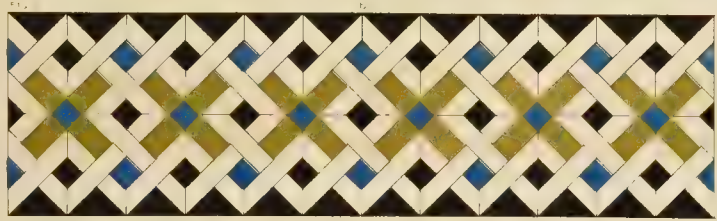
5. HALF MOON BLOCK



6. HALF MOON BLOCK



7. HALF MOON BLOCK

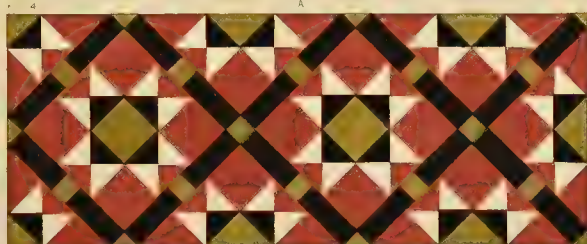
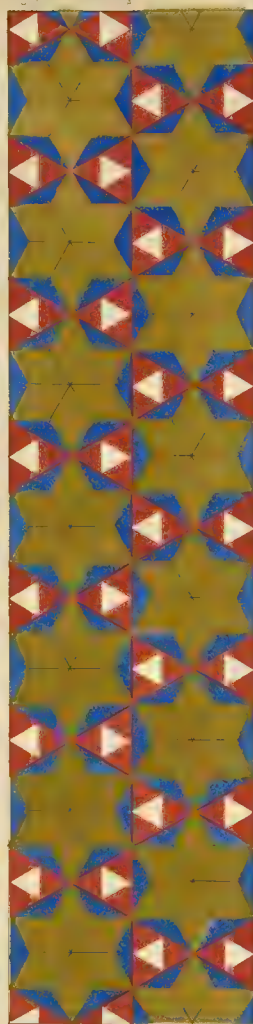


8. HALF MOON BLOCK





FROM MENAILE FULL SIZE



AWA TIME FROM AN LORENZO FULL SIZE



FIG. 1. KYPH MONREALE, FULL SIZE.



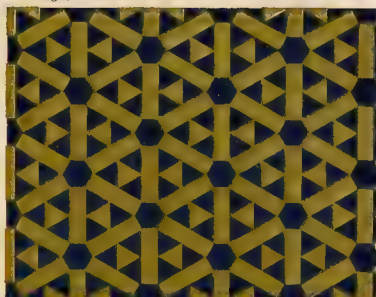
FIG. 2. KYPH MONREALE, FULL SIZE.



A



FIG. 4



SAN GIOVANNI LATERANO

FIG. 5

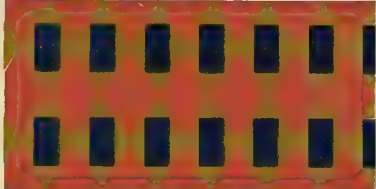
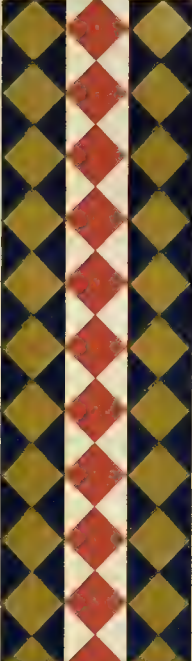
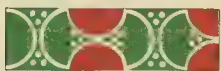


FIG. 3



AAA - FROM SAN GIOVANNI LATERANO



B B. PALERMO CATHEDRAL FROM THE KING'S SEAT FULL SIZE.
C FROM THE DVOMO, AT CIVITA CASTELLANA.





NAPLES, FROM A TOMB IN THE CATHEDRAL. FULL SIZE



GENOVA, LATER NO. 11. SIZE



THE SAN. RENZO



FROM A C. 74. PALERMO





ROBERT WATTS. 114.

THE BIBLE. THE GOSPEL OF JOHN.

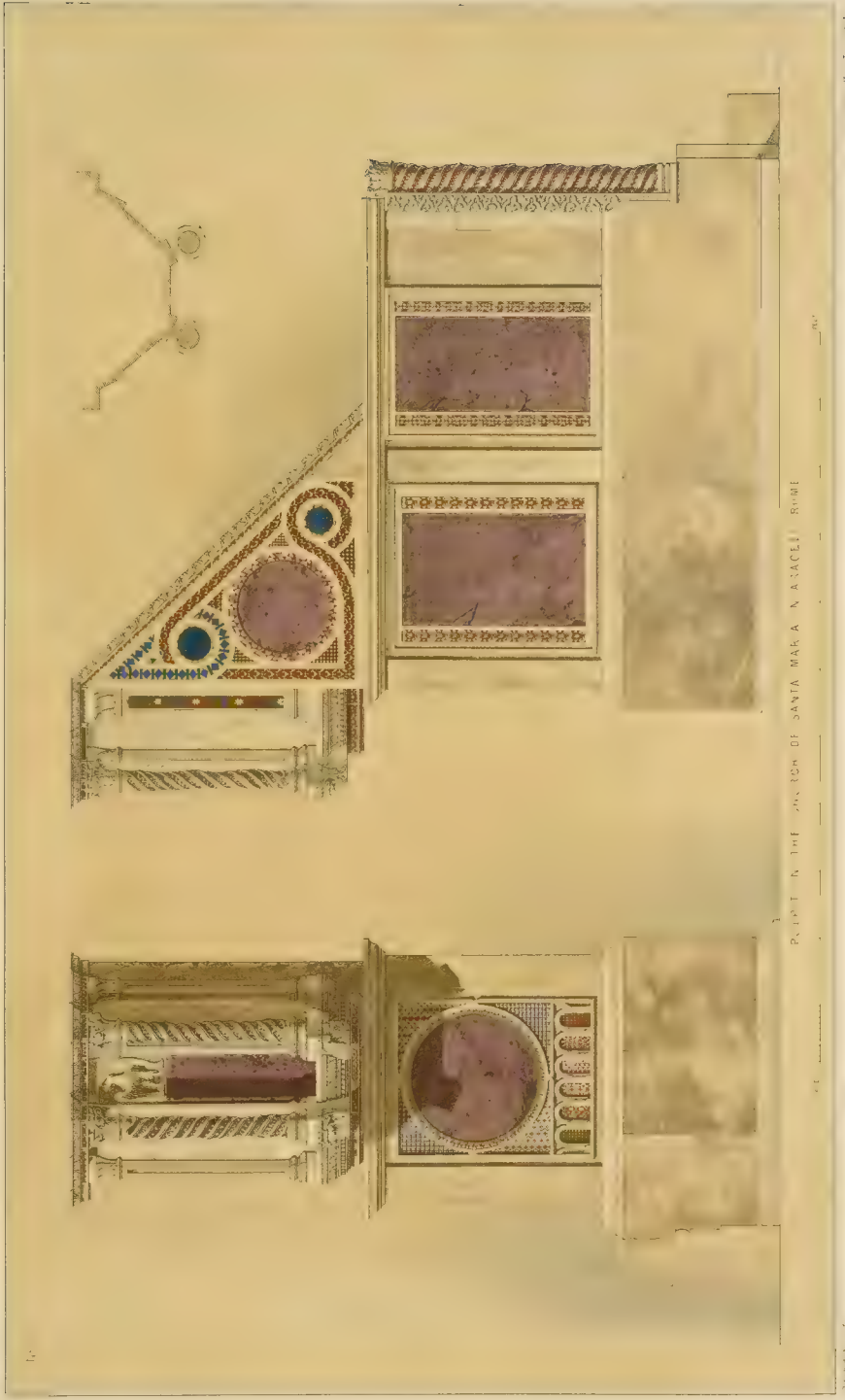
A. D. 114. THE SEAT, IN THE CATHEDRA, AT MONK A. L.

FOLIO 21.







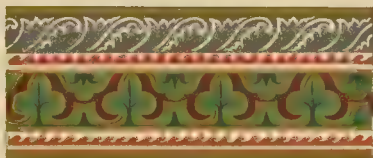


PLANT N. THE CHURCH OF SANTA MARIA IN ARACELI, ROME



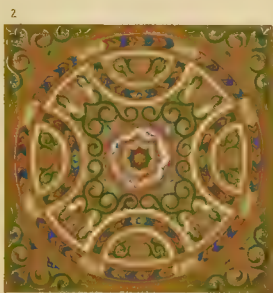
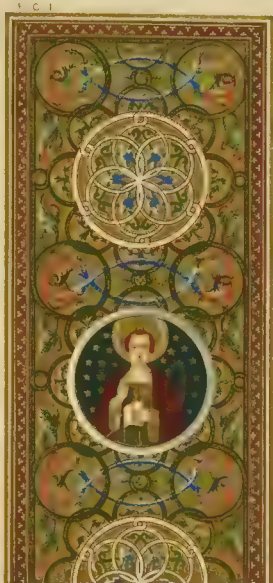






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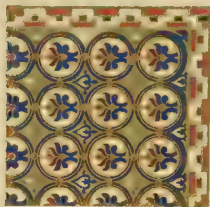
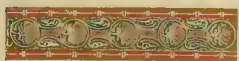
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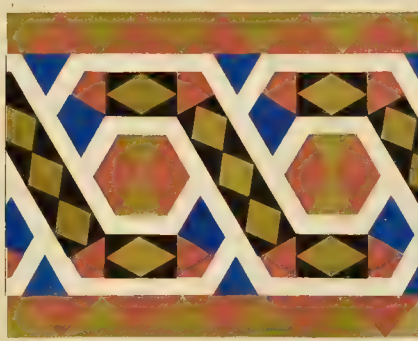
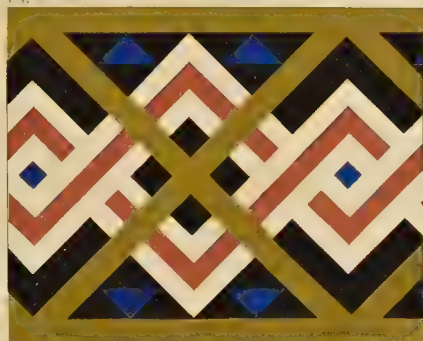
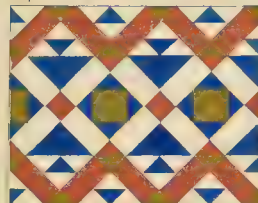
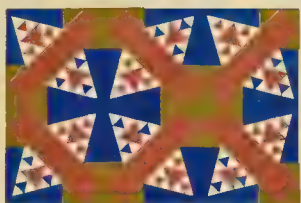
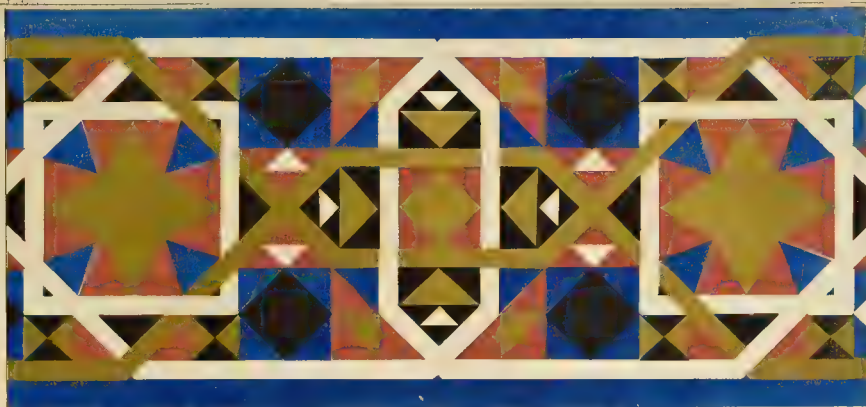


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FIG. 123456 FROM THE CATHEDRA AT SALEM.











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